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Environmental Issues

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Environmental Issues

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CONTENTS

14 May 1990

INTERNATIONAL

Conference on Global Environmental Issues Ends [Beijing XINHUA 25 Apr]	1
Sofia Conference Reviews Black Sea Pollution Concerns [Moscow TASS 6 Apr]	1
Soviets Propose Joint USSR-Japan Sakhalin Ecological Cooperation [Tokyo KYODO 20 Apr]	1

CHINA

United Nations To Finance Ozone Layer Projects [CHINA DAILY 5 Apr]	3
Hainan Governor Views Water Resources [RENMIN RIBAO 22 Mar]	3
Deputies Discuss Hainan Environmental Problems [XINHUA 4 Apr]	4
Shelterbelt Development Examined [XINHUA 28 Apr]	5
Anti-Erosion Plan for Yangtze Region Announced [CHINA DAILY 8 May]	6
Song Jian Views Results of Pollution Control [XINHUA 24 Apr]	6

EAST ASIA

JAPAN

Japan's Policies for Global Environmental Conservation [JAPAN'S POLICIES FOR GLOBAL ENVIRONMENTAL CONSERVATION Mar 90]	7
---	---

EAST EUROPE

BULGARIA

Risk of Explosion in Varna Port Examined [POGLED 30 Apr]	13
--	----

CZECHOSLOVAKIA

Sulfur, Nitrogen Dioxide Emission Statistics Provided [DOKUMENTACNI PREHLED 5 Feb]	14
Northern Bohemian Forests Still in Decline [MLADA FRONTA 10 Apr]	15

GERMAN DEMOCRATIC REPUBLIC

GDR Considers FRG's Environmental Protection Efforts [JUNGE WELT 23 Mar]	16
Local Press Reveals Scope of Atmospheric Pollution [C. Friedl; Duesseldorf VDI NACHRICHTEN 2 Mar]	17
Organic Substances Cause Severe River Pollution [THUERINGER ALLGEMEINE 12 Mar]	19

POLAND

Environmental Protection Policies, Budget, Reviewed, Criticized [Warsaw RZECZPOSPOLITA 12 Feb]	20
---	----

YUGOSLAVIA

Increased Support of Greens Seen [EKONOMSKA POLITIKA 5 Feb]	21
---	----

LATIN AMERICA

HONDURAS

Effects of Growing Deforestation Noted [LA PRENSA 6 Apr]	23
--	----

Ecological Devastation Endangers Tegucigalpa Water Supply	24
Deforestation Affects Capital [EL HERALDO 21 Mar]	24
Reservoir Endangered [LA PRENSA 19 Mar]	25

NEAR EAST & SOUTH ASIA

EGYPT

Environmental Radiation Test Plane Bought [AL-AKHBAR 19 Mar]	26
--	----

SOVIET UNION

Goskompriroda Chairman Vorontsov's Effectiveness Evaluated [B. Yunanov; SOVETSKAYA KULTURA 10 Mar]	27
Reymers on Environmental Policies, Work of Ecological Union [SOBESENICK No 3, Jan]	27
Draft State Ecological Plan Outlined [Moscow Radio 3 May]	29
Commission Official on Implementing Ecological Urgent Measures Legislation [A. Tsygankov; PRAVITELSTVENNY VESTNIK No 10, Mar]	30
Lemeshev Details Personal Environmental Concerns, Plan of Action [M. Lemeshev; LITERATURNAYA ROSSIYA 16 Feb]	31
Environmental Pressures Cited in Pharmaceutical Shortages [V. Starchevskiy; NEDELYA No 10, 5-11 Mar]	36
Public Ecological Coordinating Council Formed in Moscow [MOSKOVSKAYA PRAVDA 8 Feb]	38
Local Authorities Oppose Moscow's Amur River Dam Project [N. Belyy; RABOCHAYA TRIBUNA 15 Mar]	38
Moscow Air Pollution Statistics Broken Down by Rayon [VECHERNYAYA MOSKVA 17 Feb]	40
Peace Committee Urges Closure of Test Site [TASS 26 Apr]	41
Ministry Halts Nuclear Testing in Kazakhstan [Belgrade TANJUG 2 May]	42
Perm Residents Discuss Underground Nuclear Tests [Moscow Radio 22 Apr]	42
Perm Outlaws Construction of Nuclear Station [Moscow Radio 28 Apr]	43
Antinuclear Movement Set Up in North [TASS 23 Apr]	43
Radar Station Threat to Environment Denied [KRASNAYA ZVEZDA 7 Apr]	43
Supreme Soviet Hears Report on Chernobyl [Moscow TV 25 Apr]	44
Masol Evaluates Ukrainian Environmental Priorities [V. Masol; PRAVDA UKRAINY 17 Feb]	47
Ukrainian Supreme Soviet Decree on Accountability for Ecological Damages [PRAVDA UKRAINY 21 Jan]	58
Foreign Experts To Assess Chernobyl Effects [PRAVDA UKRAINY 29 Mar]	59
Specialist Comments on Chernobyl Aftermath [IZVESTIYA 25 Apr]	60
Academician Criticizes Radiation Hazard Guidelines [TASS 27 Apr]	62
Future of Chernobyl-Zone City in Doubt [RABOCHAYA TRIBUNA 25 Apr]	63
Pilot Plant To Decontaminate Chernobyl Planned [TASS 25 Apr]	65
Ukraine Plans New Nuclear Power Plant [Kiev International 26 Apr]	65
Health Ministry Issues Memo on Chernobyl [TASS 1 May]	65
Chernobyl Press Conference Held at UN [TASS 2 May]	66
Plan To Decommission Chernobyl, Aid Victims [IZVESTIYA 28 Apr]	66
Bryansk Oblast Radioactive Contamination Levels Decreasing [Ye. Borisova; PRAVITELSTVENNY VESTNIK No 6, Feb]	68
Tomsk Nuclear Plant Blamed for Contamination [IZVESTIYA 4 May]	69
Government Commission Reports on Ufa Contamination [Moscow TV 29 Apr]	70
Commission Adopts Resolution on Kemerovo Pollution [SOVETSKAYA ROSSIYA 5 Apr]	70
Astrakhan Gas Complex Not Meeting Promised Ecological Standards [Valeriy Kiselev; SOVETSKAYA KULTURA 10 Mar]	71
Ecological Rally Protests Cheboksary Power Station Development [Moscow Radio 10 Mar]	74
Commission Approves Georgian SSR Environmental Plan [GRUZINFORM; ZARYA VOSTOKA 28 Feb]	74
Spokesman on Program, Goals of Georgian Greens Movement [Zurab Zhvaniya; ZARYA VOSTOKA 28 Feb]	75
KaSSR Environmental Official Scores Bureaucratic Impediments to Ecological Action [KAZAKHSTANSKAYA PRAVDA 17 Feb]	76
Kazakh Editorial Supports Siberian River Diversion Plan [SOTSIALISTIK QAZAQSTAN 12 Mar]	78

Kazakh Water Official Calls for Siberian River Diversion [R. Bektibayev; <i>SOTSSIALISTIK QAZAQSTAN</i> 12 Mar]	79
Author Scores Perceived Inaction on Aral Sea, Central Asian Water Crisis [G. Reznichenko; <i>NOVYY MIR</i> No 1, Jan]	81
Wave of Radioactive Source Mishandling Incidents in Ashkhabad [K. Mirakova; <i>TURKMENSKAYA ISKRA</i> 27 Feb]	85
New Ecological Journal Published [Moscow Radio 23 Apr]	87

WEST EUROPE

EUROPEAN AFFAIRS

Third North Sea Pollution Conference Viewed	88
Conference Issues Previewed [Rotterdam NRC <i>HANDELSBLAD</i> 5 Mar]	88
British Attitudes Scored [Rotterdam NRC <i>HANDELSBLAD</i> 9 Mar]	89
EC Agency To Gather Environmental Data [Paris <i>LE MONDE</i> 27 Mar]	90
Study Shows Consumer Pressure for Environmental Action 'Nil' [Paris <i>LE MONDE</i> 27 Mar]	91
Spain Said To Lag Most on EC Environmental Norms [Madrid <i>EL INDEPENDIENTE</i> 9 Feb]	92
Mediterranean 'Environmental Disaster' Discussed [Nicosia <i>CYPRUS MAIL</i> 29 Apr]	94

FEDERAL REPUBLIC OF GERMANY

FRG, GDR Environment Ministers Hold Talks [DPA 28 Apr]	94
Toepfer Article Suggests Environmental Union [East Berlin <i>DER MORGEN</i> 19 Apr]	95
Cabinet Approves New Environmental Foundation [SUEDDEUTSCHE ZEITUNG 15 Mar]	95
Coalition Parties Consider Pollution Taxation	96
FDP Program [HANDELSBLATT 26 Mar]	96
CDU Proposal [HANDELSBLATT 28 Mar]	97

FRANCE

High Clean-Up Cost in Refinery Field Predicted [LES ECHOS 21 Mar]	97
---	----

GREECE

U.S. Bases Seen Harming Environment [PONIDIKI 5 Apr]	98
Power Plants Seen 'Awash' in PCB [ETHNOS 26 Mar]	99

ITALY

Government Bans Use of 4 Herbicides [IL POPOLO 23 Mar]	100
FIAT To Market Nonpolluting Electric Car [IL GIORNALE 8 Feb]	101

NORWAY

Project For Mapping Environmental Poisons Announced [AFTENPOSTEN 18 Apr]	101
Statistics Show Large Decrease in Air Pollution [AFTENPOSTEN 17 Apr]	102

DENMARK

Ministry Readyng Plan on Agricultural Ecology [BERLINGSKE AFTEN 11 Apr]	103
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Conference on Global Environmental Issues Ends
OW2504214090 Beijing XINHUA in English
1512 GMT 25 Apr 90

[Text] New Delhi, 25 April (XINHUA)—The conference of select developing countries on global environmental issues ended here this afternoon with a consensus of the need to strengthen consultations among developing countries to deal with the environmental issues.

The areas discussed at the conference included: the Montreal protocol and its implications for the developing countries; global warming and climate change; biological diversity; technology transfer and funding mechanisms; the 1992 conference on environment and development, and steps for consultation and coordination amongst developing countries.

Many delegates pointed out that even over the next 20 years, the developed countries would continue to be responsible for a major portion of the greenhouse gas emissions. They said any convention on climate change must provide for technology transfer to the developing countries and funds to meet their resource needs. The developing countries will not adopt a negative stand but will adopt all the possible positive measures of the are enabled to implement these measures with technology transfer and financial assistance.

They emphasized that the developing countries need to cooperate with each other to study the scientific, economic, commercial and social dimensions of the protection of environment.

Eighteen developing countries and regions from Asia, Africa, Latin America and Europe attended the conference.

The three-day conference was initiated by the government of India and started on April 23.

The delegates noted with appreciation the indication of the Chinese delegation that China intends to hold a conference in Beijing to continue the consultations among developing countries.

Sofia Conference Reviews Black Sea Pollution Concerns

LD0604231590 Moscow TASS in English 1945 GMT
6 Apr 90

[Text] Sofia, 6 April (TASS)—Experts of the Foreign Ministries of the Soviet Union, Bulgaria, Romania, and Turkey had a regular meeting in Sofia on April 3-6 to elaborate a convention on the protection and conservation of the Black Sea environment.

The experts coordinated a number of the main elements of the future convention conditions, and worked out, in the main, drafts of a convention and additional protocols to combat oil spills and discharges of other harmful

substances and to prevent the pollution of other harmful substances and to prevent the pollution of the Black Sea from on-shore sources.

However, some aspects still remain uncoordinated. Not all participants agreed with the Soviet Union-suggested introduction of a general ban on the dumping of wastes and other materials in the Black Sea, including dangerous wastes, with the exception of excavated earth.

The sides agreed to continue their work on the text of the convention.

Soviets Propose Joint USSR-Japan Sakhalin Ecological Cooperation

OW2004153990 Tokyo KYODO in English 1513 GMT
20 Apr 90

[Report by Tim Johnson]

[Text] Tokyo, 20 April (KYODO)—Soviet Deputy Foreign Minister Vladimir Petrovskiy on Friday [20 Apr] formally proposed that Japan join his country in undertaking joint ecological studies in the region of Sakhalin Island and the Kurile Archipelago, where ownership of four islands remains a simmering dispute between the two countries.

Petrovskiy, in an interview with KYODO NEWS SERVICE, said details of the proposal were presented to Japan earlier in the day in a meeting with Foreign Ministry officials. Petrovskiy called the proposal a “starting point” for shifting his country’s relations with Japan from “dialogue for the sake of dialogue” to “dialogue for the sake of achieving concrete and practical results.”

“Three or four years ago the process of dialogue was a good thing in itself,” Petrovskiy said. “But in this day and age we cannot be satisfied with a simple exchange of views.”

Petrovskiy cautioned that while the anticipated visit to Japan of Soviet President Mikhail Gorbachev in 1991 is indeed on Moscow’s diplomatic agenda, “it is no exception to the rule that top-level visits should bear tangible results.” But Japanese Foreign Ministry sources greeted the Soviet proposal for ecological cooperation in Sakhalin and the Kuriles with scepticism and suspicion. “We have serious reservations,” said one source.

The source said the proposal could possibly be “camouflage” for a Soviet attempt to assert its sovereignty over Kunashiri, Etorofu, Shikotan, and the Habomais—which were seized from Japan at the end of World War II.

Japan asserts that the four islands are historically and geographically not part of the “Kurile Islands” that it relinquished control over in the San Francisco peace treaty of 1952, and it is anxious to point out that Moscow was not even a treaty signatory.

Japan also gave up its rights to Sakhalin Island in the treaty, but the government does not recognize the Soviet Union as the legitimate owner of its former territory north of Hokkaido.

Petrovskiy noted that the proposal on ecological cooperation was initially put forward by Soviet Foreign Minister Eduard Shevardnadze in an interview published in the April 12 edition of the official government daily *IZVESTIA*. Shevardnadze told *IZVESTIYA* that Moscow "would be prepared to open the Kurile Islands and Sakhalin, turning them into a testing ground for joint efforts in the field of environmental protection."

Petrovskiy said he proposed to Japanese officials that the two countries set up a "joint research mission" to study the ecosystem of the Kurile Archipelago and formulate recommendations on how to preserve and make rational use of its resources. On both the Kuriles and Sakhalin, he said the two sides could locate rare natural phenomena and wildlife and study their exploitation for the tourist industry, while undertaking joint conservation.

Petrovskiy also suggested a joint environmental monitoring program to look into ecological and genetic factors and forewarn of potential dangers to the environment. A joint ecological experimental station could be set up on Sakhalin, he said, where experts from both countries could cooperate in studying the effect of industry on the environment.

Petrovskiy also saw a role in the scheme for related United Nations organizations.

Responding to allegations that Moscow has not reduced its "threatening" posture, Petrovskiy said Moscow has made a spate of unilateral initiatives in order to transform the Asia-Pacific "from a region of confrontation to a region of cooperation." "But this cannot continue to be a one-actor play," he said. "We want other actors to appear on this regional stage."

On recent indications that the Japanese Government is seriously considering Soviet proposals for confidence-building measures (CBM) to decrease regional military tension, Petrovskiy said "that would be welcome if it is indeed true." But he added that the two countries should also move forward in a parallel manner with dialogue on economic cooperation.

Japan has traditionally rejected such Soviet CBM initiatives and tied the establishment of full-fledged economic ties to a resolution of the territorial dispute and the conclusion of a belated peace treaty. But amid the recent unprecedented developments in East-West detente, Japan has recently allowed for greater economic cooperation with Moscow and expanded the scope of bilateral dialogue.

Petrovskiy would not say whether the proposed site for ecological cooperation with Japan would encompass the four islands claimed by Japan. Instead, he said that the reference to Sakhalin and the Kuriles in the blueprint for the scheme was meant only in a "purely geographical sense."

Soviet scholars have unofficially floated ideas in the past on joint management or development of the four disputed islands. But the Japanese Government has greeted such ideas as a masked attempt to shelve "a genuine solution to the territorial issue," namely their unconditional return en bloc to Japanese sovereignty.

Speculating on the Soviet motivation for promoting ecological cooperation in the region, one government source said, "they know that if they officially proposed joint management it would meet with harsh resistance from the Japanese Government."

Another source said the Soviet scheme would gain more credibility if it were to specify exemption of the four islands, thereby side-stepping the issue of sovereignty. Yet another said that even if this eventuated, matters would be complicated by the fact that no international agreement has ever recognized the incorporation of Sakhalin Island and the Kuriles into the Soviet Union.

United Nations To Finance Ozone Layer Projects
HK0604131190 Beijing CHINA DAILY in English
5 Apr 90 p 2

[By staff reporter Qu Yingpu]

[Text] K.C. Singh, assistant administrator of the United Nations Development Programme (UNDP), is expected to leave Beijing today, finishing his China tour with aid agreements to finance two projects for water resources management and protection of the ozone layer.

The aid, totalling \$4.1 million, was part of the \$250 million committed by the UNDP to China since 1978, said Liu Lianke, an official of the Ministry of Foreign Economic Relations and Trade who is in charge of the UNDP projects in China.

According to the agreements signed on Monday, \$3.41 million will go to a water resources management project in North China.

Liu said the money would be used to train personnel, invite foreign experts and import advanced equipment to set up information analysis centres in North China.

State policymakers would rely on the information to solve problems including water shortage and water pollution in the region, Liu said.

The project, scheduled for completion in 39 months, would start soon, he said. Experts would begin studying such urgent needs as waste water recovery and water supply for farming in Beijing, Tianjin, and the provinces of Shanxi and Shandong.

Water shortage has become a serious problem in North China. Hebei Province alone has to invest 200 million yuan (about \$42.55 million) a year to fight droughts. And Beijing is short of 850,000 tons of water every day.

Liu said the remaining \$690,000 would cover the cost of the second project—to protect the ozone layer in China. The project, to be completed within 10 months, aims to study and check the excessive levels of CFCs (chlorofluorocarbons) given off by machinery such as refrigerators.

Liu said the UNDP had provided \$180 million in aid of the total \$250 million committed to China. More than 390 projects thus financed had brought good economic and social profits, he said.

The projects were in the fields of machinery, electronics, energy, food, building materials, agriculture, forestry and technological development, and in the chemical, metallurgical and light industries.

Liu said China had been preparing another 100 projects covering fiscal 1991-95, for which it would apply for UNDP aid. They mainly concerned agriculture, communications, energy, telecommunications and capital construction, he added.

Hainan Governor Views Water Resources
HK0404030490 Beijing RENMIN RIBAO in Chinese
22 Mar 90 p 5

[Article by staff reporter Chen Jian (7115 0256): "Hainan Also Has To Sound the Alarm—Liu Jianfeng, Governor of Hainan Province, Speaks About Water Resources"]

[Text] Reporter: Before I came to Hainan I had the impression that this province has abundant water and that there is no such thing as shortage of water. But a tour around this island has told me that problems such as uneven distribution of water, droughts, and undesirable water quality do exist in Hainan all the year round. Would you please give your opinion?

Liu Jianfeng: You have raised a question that may easily elude our attention. On the surface, Hainan is not short of water. For many years, the average annual rainfall is over 1,700 mm here. There are 98 rivers on this island, each of which collects water from more than 100 square km of areas. The total volume of water resources each year is about 31.3 billion cubic meters, with per capita amount of 4,800 cubic meters of water, much higher than the national average of 2,700 cubic meters per capita. However, because of uneven rainfall in time and in geography, as well as some problems in the development and management of water resources, our province also has prominent problems and crises concerning water resources. The most outstanding one is the perennial droughts in the west. At present, 390,000 people are still short of drinking water; about 1 million mu of land has not been developed because of water shortage; and the progress in some cities and counties is held back by insufficient water supply. As the economy in Hainan develops, the demand for water will rocket. If no immediate measures are taken to manage water resources well, problems such as supply-demand conflict and water pollution will be unavoidable, and new ecological hazards will pop up.

Reporter: But I have found that the whole island is criss-crossed by irrigation canals and ditches, and the comprehensive agricultural development and farmland capital construction projects are vigorously under way in many counties. The situation in water conservancy is still an encouraging one.

Liu Jianfeng: You are right. The provincial party committee and the provincial government have attached great importance to capital construction of water conservancy works, and invested plenty of manpower and material resources last year. But problems still exist. There are 318 reservoirs of various types all over the island at present, but 119 of them are not safe as far as the construction of whole reservoir areas is concerned. Many reservoirs have aging facilities and suffer serious damages by man or animals. What with heavy seepage, poor management, and incomplete personnel establishment, the utilization rate of water resources is very low.

More seriously, groundwater has been recklessly tapped. The wells sunk in Haikou City in the 1960's were

artesian ones, which spurted groundwater two to three meters above the ground. The excessive tapping in recent years has substantially lowered the water table, down to 20 meters below sea level, forming a giant funnel measuring 600 to 700 square km. It is still heading downward by two to three meters each year. If this continues, the ground will probably subside, giving way to sea water, and the consequences will be unimaginably dreadful. For this reason, the alarm on groundwater tapping should be constantly sounded in Hainan from now on.

Reporter: Regarding water conservancy works as an important part of the infrastructure seems to be more urgent in Hainan than in any other special economic zones.

Liu Jianfeng: This is the only way out. The water resources developed and utilized in our province at the moment have reached 4.8 billion cubic meters. According to development plans, by 2005, the needed volume of water all over the island will go beyond 8 billion cubic meters, reaching the "critical state" as termed by some experts. Therefore, to make it possible for the economy to develop in a continuous, stable, and coordinated way, the problem of water has to be solved as soon as possible. On the one hand, the tapping of water resources should be kept within a rational scope without upsetting the ecological balance; on the other, we should economize on water and raise water utilization rate in production activities and daily life.

There is also a problem of water pollution. Many industrialized countries have met with quite a few frustrations and setbacks in matters concerning water. We should draw lessons from this. A treasure island of our motherland, Hainan has a fine natural environment with picturesque scenes of mountains and rivers, and is highly advantageous as a place for developing tourism. If we do not pay attention to the problem of pollution in the course of economic development, the coming generations will suffer and history will not forgive us.

Reporter: The crisis of water resources in north China has become quite obvious, but the attention paid to the latent water crisis in Hainan, which is a province with abundant water, is something extraordinary and valuable. May I ask how this idea has developed and in what way you are going to implement it?

Liu Jianfeng: I started to recognize the problem of water the year before last. When visiting Hainan for investigation, Comrade Qian Zhengying, the senior leader of the Ministry of Water Resources, raised this question to us. Back in Beijing, she said in an investigation report that Hainan should not ignore the problem of water; if it is ignored, punishment will come no matter how well the economy goes. The heavy droughts in a row in 1987 and 1988 have alerted us to the urgency of this problem.

Today, we have taken the work on water resources as an important part in laying the foundation for developing Hainan. We have gradually come to this common understanding: The water problems in Hainan must be dealt with immediately; medium- and long-term interests must be

taken into account; intensification of supply-demand conflict must be avoided; and we must guard against being forced to tackle water problems after the economy has developed. As an ancient person said, "He who tames the river can bring the world under control." Ours is a people's government, so we must be responsible to the history and the people. From now on, we should mainly set about stepping up the building of water conservancy workers, and the implementation of relevant measures; draw up corresponding local laws and regulations, and harness, protect, and utilize water according to law; step up the implementation of water-saving measures; start a batch of projects for opening up new water sources and diversion of water—a mere increase of 20 percent in the utilization rate of irrigation water in our province means 800 million cubic meters of water saved each year; pay attention to ecological balance, protect forest reserves, and manage well the conservation of water and soil; and so on. I believe that, with strict control and management starting from now, the water crisis of Hainan Island can be avoided.

Deputies Discuss Hainan Environmental Problems

OW0404175490 Beijing XINHUA in English
1437 GMT 4 Apr 90

[Text] Beijing, 4 April (XINHUA)—Deputies from Hainan Province to the National People's Congress (NPC) have called for resolute measures to stop felling tropical trees on the island and prevent further destruction of the environment and ecological imbalance.

Environmental protection was one of the hot topics at the just-ended annual NPC session, and some of the deputies' views on this subject were incorporated into the revised version of the government work report, which was endorsed by the session at its closing meeting this afternoon.

Hainan is the newest province and also the largest special economic zone in China.

Governor Liu Jianfeng said more attention must be paid to the protection of the environment on Hainan, China's second largest island, as large-scale economic construction is getting under way.

There were one million hectares of virgin forests on the 32,000 sq. km island 40 years ago, he noted. But, two thirds of them have been destroyed.

To safeguard the remaining forests, the provincial government has designated 36 nature reserves.

Nevertheless, Governor Liu and other NPC deputies from Hainan are worried about the prospects, because Hainan has little coal reserves and the six million local residents depend on firewood for cooking, constituting a growing threat to the existing forests.

NPC deputies from Hainan Province suggested that all or a bigger share of the natural gas being exploited in the Yinggehai Sea area by the central government should be retained by the province.

At the same time, they asked the Ministry of Forestry to allocate funds to relocate the 20,000 lumbermen in the island's three major timber areas and help them switch to other lines of production.

Some deputies from Henan and Hubei Provinces called for intensified efforts to harness big rivers.

Pan Xiandi, a deputy from Henan, said that the worsening water shortage in north China especially in the Beijing-Tianjin-Tangshan region not only affects the national economy but also endangers the survival of the local people there.

She said the country is facing an arduous task of controlling water pollution as the national volume of discharged waste water amounts to 30 billion tons annually and is expected to reach 39 billion tons by the end of century.

Soil erosion affects 1.5 million square kilometers of land, she said, and water and soil conservation has only covered one third of the affected area. The problem will become even worse if no further efforts are made, she warned.

Floods have constantly attacked Hubei Province and its capital Wuhan on the middle reaches of the Yangtze River. In the past two thousand years, the province has suffered from one flood in every 10 years. A flood in 1931 inundated 3.3 million hectares of farmland and caused 145,000 deaths. Another flood in 1954 suspended traffic on the Beijing-Guangzhou railway, the north-south bloodline of the country, for 100 days.

Shen Kechang, a deputy from Hubei Province and member of the technical committee under the provincial office for the Yangtze River control, warned that if no efforts are made to harness the Yangtze River and its tributaries, floods like those in 1954 will cause greater damage than in that year.

He offered a comprehensive flood control plan which consists of a project in the three gorges on the upper reaches of the Yangtze, supported by reservoirs to be built on the tributaries, reinforced dykes and dredging of rivers and lakes in the Yangtze River delta.

Other deputies called for effective measures to prevent denudation in the river's upper reaches.

Xu Xueshou, a deputy from Anhui Province, said that as a result of the worsening environment, some endemic diseases have come up again in the country, citing increasing incidence of snail fever and appearance of AIDS.

He suggested that the public health networks be strengthened through reform, patriotic health campaign carried out on an extensive scale and government expenditure on public health increased.

Wang Gong, a lawyer and deputy also from Anhui, said that the people's congresses should strengthen supervision over governments at all levels on the implementation of the laws on water, environmental protection and prevention of water pollution.

Shelterbelt Development Examined

OW2804114590 Beijing XINHUA in English
0733 GMT 28 Apr 90

[“Roundup: ‘Great Green Wall’ Pays Off”—XINHUA headline]

[Summary] Yinchuan, 28 April (XINHUA)—After a decade of effort, a 7,000-kilometer shelterbelt is helping check soil erosion. The shelterbelt spans 13 provinces and autonomous regions, from Binxian County in northeast Heilongjiang Province to Uzbel Pass in the Xinjiang Uygur Autonomous Region.

Construction of another 18,000-kilometer shelterbelt, modelled on the ‘Green Great Wall’ project, is underway in eight provinces, two municipalities, and one autonomous region on China's coasts. A plan to build shelterbelts on the upper and middle reaches of the Yangtze River has recently been approved by the state.

Over the centuries war and reclamation destroyed many forests and grasslands. By the end of 1978, only four percent of the land was covered by forest, and 430,000 square kilometers were affected by soil erosion. Since then, the central and local governments have spent 2.433 billion yuan (about U.S. \$518 million) to plant shelterbelts.

Li Jianshu, director of the Northern China Shelterbelt Afforestation Bureau under the Ministry of Forestry, said the project has had the following results:

Sand storms have been reduced as a result of planting trees on 5.67 million hectares of sandy areas in 260 counties.

Shaanxi Province's Yulin Prefecture, on the edge of the Mu Us Desert, began to plant trees on 130,000 hectares a year starting in 1980. As a result, the tree coverage rate has risen from two percent to 36.8 percent and half of the 530,000 hectares of shifting sands have been anchored by trees and grass.

Due to afforestation, tree coverage in the Mu Us and Horqni Deserts is now 15.8 percent and 13 percent respectively.

According to the director, 30 percent of eroded areas have been stabilized as a result of planting trees and grass on 440,000 hectares of mountain valleys in Shaanxi, Shanxi, and Hebei Provinces and the Inner Mongolia Autonomous Region.

A shelter belt south of Luliang Mountain in Shanxi Province's Jixian County has held back more than 16.8 million tons of soil which used to be washed into the Yellow River.

According to the director, a microclimate has formed on 11 million hectares of farmland surrounded with trees. Grain output has increased between 10 and 20 percent over the past few years.

Moderate gales used to greatly affect the growth of crops in Jilin Province's Nongan County. The poor weather has disappeared as a result of planting trees along ridges,

and the county's annual grain output has increased from 15 to 33 percent over the past seven years.

The second phase of a green shelterbelt project is in full swing in 466 counties in 13 northern provinces and autonomous regions.

Under the plan, by the year 2050 the area under forest in northern China will grow to 60.57 million hectares, up from 24.94 million hectares in 1977; the tree coverage rate will increase from four percent to 14.95 percent; and timber reserves will grow from 720 million cubic meters to 4.27 billion cubic meters.

Anti-Erosion Plan for Yangtze Region Announced

*HK0805022090 Beijing CHINA DAILY in English
8 May 90 p 1*

[By staff reporter Wang Dongtai]

[Text] China has started to build up a green shelter belt along the upper and middle reaches of the Yangtze River to stem worsening soil erosion.

Minister of Forestry Gao Dezhan announced in Beijing yesterday that the project will cover 145 counties of nine provinces through which the river runs.

The project, the first phase of a 30 to 40-year programme, aims to protect the environment and clear up the river by afforesting 20 million hectares of trees in the river covered area, said the minister.

The first phase of the project, which is supposed to be completed by the year 2000, will plant 6 million hectares of trees.

The Yangtze River, also known as Changjiang, is the longest river in China.

For many years, too many trees were cut as timber or fire-wood by timber industries and farmers. And soil erosion increased from 360,000 square kilometres in the 1950s to 560,000 square kilometres in the 1980s.

About 2.2 billion tons of soil were lost each year. And 15 percent of the land in the upper reaches of Wujiang River branch are bare stones without soil.

If no methods are adopted to control soil erosion, half of the area's farmland will be lost in about 50 years.

In some places, river beds rose more than 10 metres. And floods, drought and mud-rock flows have become the three major natural disasters in the area.

Natural disasters have cost billions of yuan annually in the past 30 years. And the nine provinces in the upper and middle reaches of the river lose 9.5 billion kilograms of grain each year because of natural disasters.

The first phase of the project was approved by the State Planning Commission in June last year and has been started in 39 counties.

This year, the central government has allocated 22 million yuan (\$4.6 million) and local governments invested about 30 million yuan to start the project in the 145 counties involved.

When the first phase completes, 74,000 square kilometres of soil erosion is expected to be under control.

The forests can also produce a yearly 2.8 million cubic metres of timber and 9.6 million tons of firewood. They can also benefit agricultural and industrial production in the middle and lower reaches of the river.

At a recent meeting in Hubei Province, forestry officials from the nine provinces involved promised to do a good job, Gao said.

The river area produces 40 percent of the country's industrial production value and 45 percent of the country's light industrial production value. The area also produces half of the country's steel.

Agricultural production value in the river area constitutes 34 percent of the total in the country, with 55.7 percent of the country's rice output, 57 percent of cotton output and 60 percent of the country's freshwater fish.

Song Jian Views Results of Pollution Control

*OW2404193090 Beijing XINHUA in English
0553 GMT 24 Apr 90*

[Text] Beijing, 24 April (XINHUA)—Haikou, capital of Hainan province in south China, has the least-polluted environment among all the major cities in China.

Dalian, a coastal city in Liaoning Province in northeast China, has had the best results in controlling pollution and improving the environment. Following Dalian were Beijing, Hangzhou, Shenyang and Tianjin.

Song Jian, minister of the State Science and Technology Commission, made the disclosures here on Monday at the 17th meeting of the State Council's Environmental Protection Committee.

Song, also director of the committee, said the other 15 cities following Haikou in the list of the country's major cities with the best environments were Yinchuan, Shijiazhuang, Dalian, Nanjing, Lanzhou, Wuhan, Huhhot, Nanchang, Changsha, Beijing, Guilin, Guiyang, Guangzhou, Tianjin and Urumqi.

The list was compiled after a 1989 national examination of pollution in the three directly administered municipalities and the capitals of the country's provinces and autonomous regions, and Guilin, Suzhou and Dalian.

The examinations focused on air and water pollution, noise control, solid waste disposal, afforestation and other problems.

Compared with 1988, the environment in 25 out of the 32 cities had generally improved in 1989.

JAPAN

Japan's Policies for Global Environmental Conservation

43078026A Tokyo JAPAN'S POLICIES FOR GLOBAL ENVIRONMENTAL CONSERVATION in English
Mar 90 pp 1-19

[Booklet by Global Environmental Conservation Office, Planning and Coordination Division, Planning and Coordination Bureau, Environment Agency: "Japan's Policies for Global Environmental Conservation"]

[Text] Japan's Policies for Global Environmental Conservation

Japan Environment Agency
March 1990

1. Chronology of Policy Measures Taken To Deal With Global Environmental Problems

(1) May 1988. The annual White Paper on the Environment in Japan which focused on "Japan's Contribution Toward Conservation of the Global Environment" was adopted by the Cabinet for submission to the Diet (National Parliament).

(2) May 1988. The Law for the Protection of the Ozone Layer through Control of Specified Substances and Other Measures was enacted. This law is the domestic legislation implementing the measures provided for by the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances That Deplete the Ozone Layer.

(3) June 1988. A report entitled "Japan's Activities to Cope with Global Environmental Problems" was released by the Experts Group on Global Environmental Problems, which is an advisory body to the Director-General of the Environment Agency (EA) and chaired by Dr. Saburo Okita, former Foreign Minister and a member of the World Commission on Environment and Development. The report made specific recommendations regarding Japan's activities following up on the final report of the WCED, "Our Common Future."

The WCED was established in 1984 by a United Nations General Assembly decision, based on an initiative taken by a former Director-General of the EA, Mr. Bunbei Hara.

(4) In light of growing international debate and discussion regarding global environmental problems, the EA and other Ministries/Agencies concerned within the Government began research and investigation of these issues through organizing study groups and committees, and other measures.

(5) August 1988. The EA set up the Global Environment Protection Task Force headed by the Administrative Vice-Minister in order to develop action programs to implement the recommendations of the Experts Group on Global Environmental Problems. The Task Force

published an interim report in May 1989, putting forth the policy directions for Japan to deal with global environmental problems.

(6) May 1989. The Cabinet agreed to set up the Council of Ministers on Global Environmental Conservation by a verbal understanding, in order to ensure close contacts among the administrative organizations concerned and to promote the measures to cope with global environmental issues effectively and comprehensively. The Council is chaired by the Prime Minister and comprised of 19 Ministers (the Minister in Charge of Global Environmental Problems was added later) and executives of the ruling Liberal Democratic Party.

(7) June 30, 1989. At the first meeting of the Council of Ministers, an agreement was made regarding the basic direction of Japan's programs for the conservation of the global environment. (see annex 1)

(8) July 1989. The Director-General of the EA was assigned as the Minister in Charge of Global Environmental Problems, with a view to coordinate the programs of concerned Ministries/Agencies in the field of global environment.

(9) September 1989. Tokyo Conference on the Global Environment and Human Response Toward Sustainable Development, co-sponsored by Japanese Government and UNEP, was held with participation of the world's leading experts, and the concluded chairman's summary made recommendations for actions the global community should take to conserve the global environment. Among the findings was requirement of a new commitment to the Environmental Ethics upon which actions can be taken to modify socio-economic activities including the life-style in developed countries for a sustainable development.

(10) October 1989. At the second meeting of the Council of Ministers, the agreement was made regarding the comprehensive promotion of the research, observation/monitoring, and technology development for the conservation of the global environment. (see annex 2)

2. Measures To Assist Developing Countries for Environmental Conservation

(1) Environmental Problems in Developing Countries

Developing countries are facing not only such problems as desertification and tropical deforestation caused by inappropriate use of natural resources but also severe environmental pollution, which has been seen in developed countries, as a result of accelerating industrialization and urbanization.

It is seriously required to assist these countries both technically and financially in solving those problems, since they lack technological and financial resources which would make their environmental law and machinery really effective.

Necessity of increased aids to developing countries was stressed at the "Tokyo Conference on the Global Environment and Human Response toward Sustainable

Development" held last September, and is indeed of great importance for the global community.

(2) Measures Taken by Japan

Japan will expand international cooperation in the field of environmental protection.

Prime Minister expressed our intention to increase the environment-related official development aid to ¥ 300 billion (US\$2.25 billion) in three years before the Arche Summit last year.

The average amount (fiscal '86-'88) of environment-related ODA by Japan reaches around ¥ 60 billion, which ranks among those of leading countries in the world.

(3) Improvement of the Environmental Considerations Regarding ODA Projects

It is very important to pay due considerations to the environment of recipient countries when implementing the ODA projects. The agreement of the Council of Ministers for Global Environmental Conservation declared a principle to improve such environmental considerations.

Currently, the Japan International Cooperation Agency and the Oversea Economic Cooperation Fund are developing guidelines of the environmental considerations, as well as strengthening the organizational capacities.

Yearly Amounts of Grants and Loans		
Fiscal year	Grants total amount (billion yen)	Loans total amount (billion yen)
'84	8.51	46.87
'85	14.75	73.70
'86	13.71	6.07
'87	19.17	18.88
'88	21.67	81.96

3. FY 1990 Budget for Global Environmental Conservation

(1) The total of the Administration's FY 1990 proposal relating to the global environmental protection amounts to ¥ 452.3 billion, which is an increase of ¥ 27.6 billion (6.3 percent up) above the FY 1989 budget. (see annex 3)

(2) Environment Agency's budget proposal for FY 1990 relating to the global environment protection amounts to ¥ 2,147 million, an increase of as much as 142 percent above ¥ 886 million in FY 1989 budget. (see annex 4)

4. Institutional Improvement of EA To Promote Global Environmental Programs

(1) Establishment of a Global Environment Department

In order to strengthen the comprehensive coordination capacity within the Government concerning global issues, a new Global Environment Department is to be established in the Planning and Coordination Bureau of EA as of July 1990.

(Mandates of Global Environment Department)

1) Development, planning, and implementation of basic policy for the conservation of the global environment

2) Comprehensive coordination of programs of administrative organs relating to the global environmental conservation

3) Comprehensive promotion of researches through the Expenditure for the Promotion of Global Environmental Research and other programs

4) Promotion of international cooperation in the field of environmental administration

5) Collection and analysis of information relating to the global environment, secretariat functions for the Council of Ministers

(2) Reorganization of the National Institute for Environmental Studies and Establishment of a Global Environment Research Center

The National Institute for Environmental Studies is to be reorganized and renamed as of July 1990 in order to keep up with growing demands for research activities such as in the field of global environment. Consequently, a new Global Environment Research Center is to be established under the wing of NIES in October 1990 to serve as a main institution to pursue the research and monitoring of the global environment.

Annex 1

Measures for Global Environmental Conservation

June 30, 1989

Agreement of the Council of Ministers for Global Environmental Conservation

1. In recent years, the level of economic activities further heightened in the industrial nations, the poverty and the sharp increase and urbanization of population in the developing countries, together with the extended international interdependence have brought growing concern about various global environmental issues, and there has been an international move surging to cope with these problems.

Global environmental issues pose a grave problem, threatening the existence of human beings. Whereas, the idea of "sustainable development"—a notion to pursue development without damaging the environment which is the basis for the future development—has now become common understanding worldwide. It is vital to strive for the protection of the global environment, while assuring the stable development of the world economy, to realize this concept.

Under these circumstances, Japan, being related in no small degree to the global environment through its extensive economic activities and having advanced technologies in the environmental pollution control and other fields, has taken a part in tackling these problems, and further should play a more positive role in the world as assuming our international position from the stand-point of "Japan contributing to the world."

2. The measures of Japan for the global environmental conservation is to, for the time being, be in line with the following principles:

(1) Participation positively in formulating an international framework for protecting the global environment and promotion of the measures from a global viewpoint. For this purpose, we will participate actively in activities under the auspices of such international organizations as the United Nations Environment Programme (UNEP), as well as in international conferences, and will work towards agreement and implementation of the international measures.

In particular, Japan will seek to contribute to strengthening of the measures for protecting the ozone layer in the wake of the Helsinki Declaration, to formulating the international framework to smoothly implement the measures to cope with global warming, as well as to step up of the efforts concerning the trans-boundary movement of hazardous waste as concluded by the Basel Convention.

(2) Promotion of the observation/monitoring and the research of the global environment to expedite the formation of the basis for global environmental protection, through scientifically understanding the effects of various human activities on the global environment.

In particular, Japan will actively contribute in the fields of wide-ranging observation of the atmosphere, oceans and ecosystems and environmental monitoring via satellite on a global scale, aiming at formation of an international observation/monitoring network, as well as promote joint international research programs.

(3) Pursuing the development and transfer of technologies for the global environmental protection and thus contributing to the various international efforts.

Specifically, we will further seek to develop and transfer the substances and products which have less impacts on the global environment, such as the substitutes to specified chlorofluorocarbons, and to develop technologies for resource conservation and energy saving, new energy technology, and environmental protection technology for the prevention of global warming, as well as to promote the use of various energy sources alternative of fossil fuels.

(4) Positive contribution to the protection of the environment in developing countries. In order to help support the efforts of developing nations to control environmental pollution, and to conserve the natural resources such as tropical forests and endangered species, Japan will expand the official development assistance for environmental protection, develop, and transfer the appropriate technology for these countries, and promote human resources in the field of environmental protection.

In particular, with respect to the conservation of tropical forests which requires prompt international measures, Japan will provide further assistance to the international organizations. As well, we will endeavor to provide appropriate assistance to developing countries to enable them to take measures for protecting the ozone layer, which is of vital importance to the world.

(5) Strengthening of the environmental considerations as for the implementation of the official development assistance. We will take steps to establish the procedures and develop the guidelines for environmental considerations, as well as improve the institutions and develop human resources in order to ensure smooth and efficient implementation of the system.

Moreover, we will ensure that due environmental considerations are paid with respect to overseas assistance based on other governmental funds and overseas activities by the private sector.

(6) Endeavor to carry out socio-economic activities in a manner which has less burden on the global environment, such as the promotion of resource conservation and saving energy.

Furthermore, we will pursue the awareness and education programs of the global environmental protection, since it is indispensable to obtain the understanding and cooperation of the public in all walks of life.

3. The Ministries and Agencies concerned will promote global environmental protection measures in line with the principles outlined above in 2 and in close coordination with each other, and will deal with such measures in a flexible manner, taking into account scientific findings to be accumulated and future international trends.

Annex 2

Regarding the Comprehensive Promotion of the Research, Observation/Monitoring, and Technology Development for the Conservation of the Global Environment

October 31, 1989

Agreement of the Council of Ministers for Global Environmental Conservation

1. The Government will, in accordance with the Agreement of the Council of Ministers for Global Environmental Conservation on June 30, 1989 and other measures, promote the research, observation/monitoring, and technology development for the conservation of the global environment comprehensively as follows, under close relations among the Ministries/Agencies concerned.

(1) Promotion of research

Participate actively in joint international research programs, and promote the research on various mechanisms of the earth which relate to the global environmental problems, on interactions between human activities and the global environment, and on measures to conserve the global environment, through integrating the capacity of the researchers both in Japan and abroad.

(2) Promotion of observation/monitoring

Promote wide-ranging observation/monitoring of the atmosphere, oceans and ecosystems and observation/monitoring via satellite, and endeavour to improve the international observation/monitoring network.

(3) Promotion of technology development

Promote the development of technologies in various areas, in cooperation with the private sector, in order to contribute to the international efforts for the conservation of the global environment.

2. In order to ensure the aims referred to in the above, following measures are to be implemented.

(1) Comprehensive Implementation Plan

a. At the beginning of each fiscal year, the Council of Ministers for Global Environmental Conservation is to decide on the National Plan of Research and Development for Global Environmental Conservation pertaining to the research, observation/monitoring, and technology development which are to be carried out in the fiscal year.

b. The actual state and the results of the National Plan is to be reported to the Council of Ministers for Global Environmental Conservation every year.

(2) Assignment of contact office and other measures

a. Ministries and Agencies concerned will put together the results of the research, observation/monitoring, and technology development for the conservation of the global environment, and mutually exchange the necessary information.

b. The Environment Agency will assign a contact office for the general information service regarding the conservation of the global environment. Other Ministries and Agencies will also assign a contact office so as to cooperate with the contact office of the Environment Agency and provide information in each field of administrative mandate.

Annex 3**Administrations FY 1990 Budget Proposal to the Global Environmental Conservation**

1. The total of administrations FY 1990 budget proposal relating to the global environmental protection is as follows:

FY 1989 Budget	4,256 (in 100 million yen)
FY 1990 Budget	4,523 (in 100 million yen)
90/89 comparison	6.3% up

2. By functions is as following tables.

Table 1 (in 100 million yen)

	FY 89 Budget	FY 90 Budget Proposal	Change (%)
General expenditure	441	600	+35.9
Satellite and other research and development	259	219	-15.2
Energy programs	3,547	3,693	+ 4.1
Miscellaneous	9	10	+16.2

Table 2 (in 100 million yen)

	FY 89 Budget	FY 90 Budget Proposal	Change (%)
Formulation of international framework	49	64	+ 31.1
Observation/monitoring and research	607	602	-0.9
Technology development and transfer	3,587	3,815	+6.4
ODA in environmental field	5	14	+204.2
Environmental Impact Assessment	7	26	+263.6
Public awareness and education	1	2	+ 34.7

Annex 4**Environment Agency's FY 1990 Budget for the Global Environmental Conservation**

		(in million yen)
Total	FY 1989 Budget	886
	FY 1990 Budget Proposal	2,147
	(90/89)	242.3%

1. Further promotion of measures for the global environmental conservation—1,827 (647)

(1) Comprehensive promotion of research and monitoring of global environment—1,508 (442)

Promote comprehensive research under "Global Environment Research Program," and establish a new Global Environment Research Center as a core-center in National Institute for Environmental Studies. (See annex 5) [as published]

(2) Global warming program—30 (4)

Participate positively in formulating an international framework convention and promote actively the research of effects and the investigation of measures.

(3) Ozone layer protection program—140 (70)

Promote the development of a sensor to be loaded on a satellite, study the environmental impact of substitutes of CFCs, and promote the preparation for tightening the control.

(4) Acid rain program—66 (53)

Expand the research activities and increase monitoring stations in remote islands (Risiri, Rebun, Sado).

(5) Marine pollution prevention [as published] program—74 (73)

(6) Transboundary movement of hazardous waste program—9 (5)

Supplement final disposal standard of hazardous waste, as required by the Convention on the Control of Transboundary Movements of Hazardous Wastes.

2. Promotion of international cooperation for global environmental conservation—320 (238); (inclusive) ODA: 185 (100)

(1) Promotion of international cooperation through international organizations, international conventions and others—79 (69)

(2) Promotion of international cooperation for sustainable development in developing countries—91 (63)

(3) Assistance to developing countries in implementing the measures for global environmental conservation—19 (0)

(4) Promotion of international cooperation for protection of tropical forests, wildlife and other natural resources in developing countries—131 (106)

I. Expenditure for the Promotion of Global Environmental Research

1. Outline

—to organize Committee for the Planning of Global Environmental Research and Monitoring to formulate “Global Environmental Research Program” and review results of researches of the program

—to promote researches on “interactions between human activities and the global environment” and “measures to conserve the global environment” in cooperation of national research institutes, universities and foreign research institutes

—to promote researches under “National Plan of Research and Development for Global Environmental Conservation” which will be annually formulated by the Council of Ministers for Global Environmental Conservation

Researchers in and out of Japan who implement researches spending the expenditure will be invited to Global Research Center (to be explained later) to be visiting researchers in order to promote comprehensive researches.

2. Draft Budget

¥ 1,200 million (FY 1990)
(research expenses, travel allowance, etc.)

3. Schedule

1990

April

Decision of “Long-term strategy” (Committee for the Planning of Global Environmental Research and Monitoring)

Decision of “National Plan of Research and Development for Global Environmental Conservation” (the Council of Ministers for Global Environmental Conservation)

June

Formulation of “Global Environment Research Program” (Committee for the Planning of Global Environmental Research and Monitoring)

July

Allocation of the expenditure according to Global Environmental Research Program (the Environment Agency)

[Implementation of the research program by national research institutes etc.]

1991

March

Review of results of the researches (Committee for the Planning of Global Environmental Research and Monitoring)

4. Fields of the Researches

- (1) Depletion of the ozone layer
- (2) Global warming
- (3) Acid precipitation
- (4) Marine pollution
- (5) Tropical deforestation
- (6) Desertification
- (7) Loss of biodiversity

5. Duration of the Researches

1 to 5 years

II. Establishment of Global Research Center

1. Outline

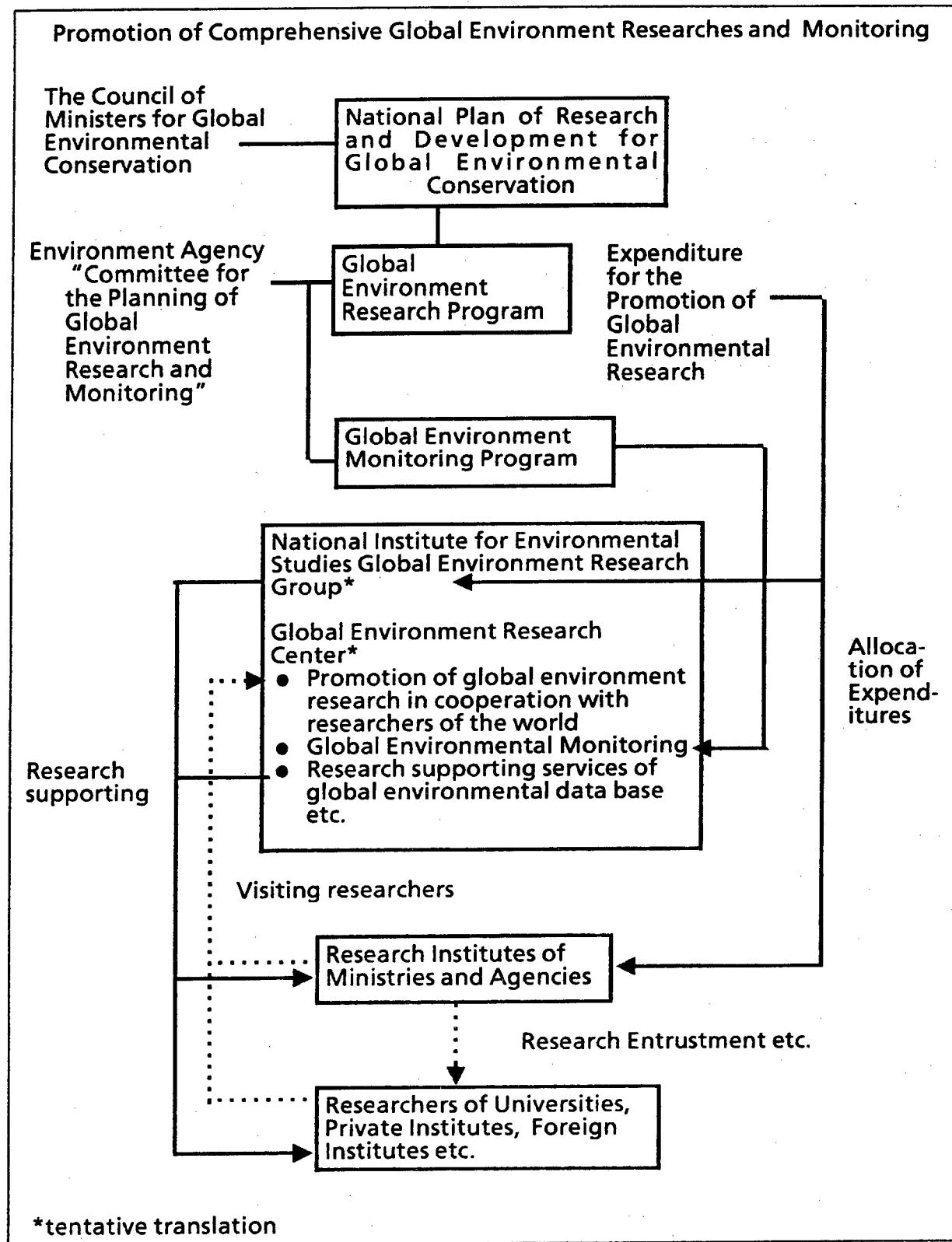
Global Environment Research Center of NIES (National Institute for Environmental Studies) will be established as a core-center

—to invite researchers who implement researches spending the expenditure and some other researchers as visiting researchers for comprehensive global environment researches

—to monitor environment in Asia and the West Pacific with satellites, aircrafts, ships and ground stations according to a program to be formulated by Committee for the Planning of Global Research and Monitoring

—to support global environment researchers providing them with Global Environmental Database (to be developed) etc.

2. Draft Budget: ¥ 228 million (FY 1990)



BULGARIA

Risk of Explosion in Varna Port Examined

AU0305171390 Sofia POGLED in Bulgarian
No. 18, 30 Apr 90 pp 2, 3

[Ivan Rachev article: "With a Bomb Ticking Away in Our Midst"]

[Text] Exactly three-and-a-half years ago, the heart of our chemical industry became the epicenter of an accident at the chlorine, vinyl chloride, and polyvinyl chloride plant, which was serious for a country of Bulgaria's size. There was great destruction, human casualties, and hundreds of homes went into mourning. The causes of the accident were established, but the lessons from it have still not been drawn.

"Early on 1 November, an explosion swept away two of the workshops of the chlorine, vinyl chloride, and polyvinyl chloride plant. In the plant's conference room, cards bearing the names of those taking part in the meeting had been set out on the table.... Together with the fragments of the wall panels and the remnants of the expensive imported equipment, the whirlwind caused by the explosion also carried away these cards. If the fire had reached the chlorine tanks, the consequences would have been much more dangerous...."

This was how my colleague Georgi Grozdev began his on-the-spot report from the site of the accident, entitled: "Devnya: Five Months Later" (POGLED No. 12, 23 Mar 87). Today we return again to the site of the tragedy, not in order to find out the extent to which the damage has been repaired or how those responsible have been punished, but principally because of the conclusion of the cited article, which clearly revealed the cause that led to the inevitable explosion:

"Recently a leak appeared in an installation in the workshops of another plant at Devnya. If this had happened before the accident, production would not have been halted because of the need to fulfill the plan. Is it really necessary to pay such a high price to learn the truth in the future? Restructuring begins at the point where we stop chasing after plan fulfillment with all one's strength and at any price...."

However, let us set off on our trail.

At the end of 1988, an industrial installation for the production of dichloroethane came into operation at the "Polikhim" Company in Devnya, and at the start of the following year active export operations began from the Varna West Port, using chemical tankers. "Provisional Measures for the Safe Loading of Chemical Tankers With Dichloroethane at Varna West Port" were drawn up. These were coordinated with all the interested authorities, and at the top obtained the signatures of the minister of interior affairs (then Dimitur Stoyanov) and the minister of transport (Georgi Tanev). These regulations, while reflecting all the efforts of the responsible

bodies to ensure the safety of operations, also permitted two compromises. First, they approved a quay—which had nothing in common with the specific operations and which meets hardly any of the safety measures applied throughout the world—to be used as a terminal for loading such dangerous chemicals, and, second, they allowed the dichloroethane to be loaded using a so-called "soft pipe," which is mounted on the installation immediately before the tanker enters port.

The second "start" of our journey was 23 January 1990, when the State Inspectorate of Navigation in Varna received a telex from Khimimport that notified all interested parties of the arrival of the tanker "Adria," sailing under a Panamanian flag. The vessel was to take on 3,000 tonnes of dichloroethane. All the final deadlines for using the "soft pipe" had long ago expired, so that it was quite natural that the telex should be endorsed with an order by Captain Al. Purvanov, Varna State Inspectorate of Navigation deputy chief, prohibiting the tanker to enter the port. One should add that, under the Code of Commercial Navigation and the "Binding Instructions of the State Inspectorate of Navigation" that are based on this code, the inspectorate offices are the only bodies that determine whether a given vessel may enter or leave a particular Bulgarian port.

"Polikhim" reacted immediately, in the form of an urgent request to the leadership of the Ministry of Transport to lift the ban, and the request was met the very same day, 23 January, by the first deputy minister of transport. At the end of the message, we read the following incredible words: "In connection with your request to extend the deadline for using a soft loading pipe for dichloroethane, we inform you that we have no objection to the tanker 'Adria' being accepted for loading on this one occasion and completely at your responsibility." The signature is indecipherable, but is not needed, because the name of the company is enough.

As far as the categorical restriction "on this one occasion" is concerned, this lasted only one month, because on 19 February the tanker "Obrovats," sailing under a Yugoslav flag, appeared on the horizon and asked permission to enter port to load a further 3,000 tonnes of dichloroethane. Once again the State Inspectorate of Navigation refused permission for the tanker to enter port (and kept it waiting for almost 36 hours), and once again "Polikhim" reacted with lightning speed. However, this time the company was in the line of fire, because this was a second violation. "Polikhim" General Director Ivan Dimitrov submitted a memorandum setting out even more weighty arguments in favor of a further exception, namely that 16 tankers had already been loaded without accident (by luck), that similar soft hoses were used in other developed countries, such as Japan (where, however, all other safety regulations are complied with), and third (and most important in the whole chain of irresponsibility), that dichloroethane sells very well in the international market. This was followed by the usual promise that "Polikhim" would bear complete responsibility for any accident.

The memorandum in question was submitted to the Council of Ministers on 19 February, and on the following day the State Inspectorate of Navigation received a message from the Ministry of Transport (again with an indecipherable signature) notifying them that Council of Ministers Deputy Chairman Chudomir Aleksandrov had not only permitted the tanker "Obrovats" to be loaded, but also had extended the deadline for using the "soft pipe" until the end of May. This in fact was the main purpose of the memorandum, which also stated that a contract had been signed with Mannesmann of the FRG for the supply and installation of a "hard pipe."

We visited Varna West Port at the end of April, but did not hear any mention of any imported equipment or see any signs of intense activity to render the terminal safe. Everything was as before; the crane that traverses the terminal (which is also unthinkable in developed countries) was ready to set off, while the specialists were mainly worrying about the construction of a specialized quay for dangerous cargo. It turned out that the proposed site for this quay also does not meet safety requirements. The quay is scheduled to be completed by the end of next year, at a cost of tens of millions of leva, but no one believes that it will be finished, at least within the next five to eight years.

This is all very well, but why all the panic? A logical question.

According to international standards, dichloroethane is an inflammable liquid, which according to the International Code for Dangerous Cargoes has an ignition temperature of nine degrees Centigrade and forms an explosive mixture with air at concentrations between 6.2 and 15.9 percent. In other words, it must be handled with care. Dichloroethane vapors irritate mucous membranes, are highly toxic, and have paralytic and narcotic effects. For all those who have undergone military training and been through the barracks, we will add that the combustion of dichloroethane produces large amounts of phosgene, which is classified among the most dangerous toxic agent used in war. Furthermore, dichloroethane is included in the international list of agents in the group that in the form of unrestricted vapors may cause catastrophic explosions.

What would happen if there were an accident? The entire port complex and the neighboring residential areas, almost the whole of valley containing our big chemical plants, the Sofia-Varna main railway line, and heaven knows what else would go up in the air, to put it mildly. It would be impossible to do anything about the damaged tanker, because according to regulations it should be towed out to open sea. In the conditions prevailing at the Varna West and Varna Ports this is also impossible, since the journey would take at least an hour and a half and the ship would pass by residential areas, the ferry complex, the densely populated districts of Varna, and the immense storage depot of the "Petrol" Company.

Truly a frightening picture, and we can only knock on wood. However, what is even more terrible is the thoughtless disregard for this possible situation. What is the real reason for this?

CZECHOSLOVAKIA

Sulfur, Nitrogen Dioxide Emission Statistics Provided

90EC0357X Prague DOKUMENTACNI PREHLED
in Czech 5 Feb 90 pp 9-10

[Unattributed article: "The Environment in Czechoslovakia"]

[Text] Air quality in Czechoslovakia is affected significantly by its position in the center of Europe. Sulfur dioxide emissions from all neighboring countries drift to the CSSR depending on meteorological conditions and the prevailing winds. On the other hand, Czechoslovakia is itself a significant producer of emissions which it "exports" to neighboring countries.

The tables in this article have been taken from a report of the Ecology Division of the Czechoslovak Biological Society of the Czechoslovak Academy of Sciences [CSAV], and from the work of an ecology working group of the CSSR Council of Economic Research (published in 1989). These tables demonstrate the transmission of sulfur in the air between Czechoslovakia and its neighbors and overall emissions of sulfur dioxides and nitrogen dioxides in selected countries.

Transmission of Sulfur To Czechoslovakia (thousands of tons per year)

From:	1979	1982	1985	1986	1987
Austria	12	8	3	5	4
GDR	104	89	95	90	128
FRG	41	29	24	18	28
Hungary	56	48	40	47	45
Poland	73	75	74	89	95
USSR	2	3	4	3	2
Total	288	252	240	252	302

Transmission of Sulfur From Czechoslovakia (thousands of tons per year)

To:	1979	1982	1985	1986	1987
Austria	25	27	24	27	27
GDR	85	86	58	79	84
FRG	45	52	39	62	47
Hungary	31	29	28	21	31
Poland	169	154	109	142	145
USSR	134	112	107	103	107
Total	489	460	365	434	441

Sulfur Dioxide and Nitrogen Dioxide Emissions in Selected Countries in 1980 and in 1985 (in thousands of tons)

	Sulfur Dioxide Emissions		Nitrogen Dioxide Emissions	
	1980	1985	1980	1985
Belgium	799	467 ²	442	385 ²
Bulgaria	1,034 ³	1,140 ³	—	—
Czechoslovakia	3,100	3,150	1,204	1,127
Denmark	438	326	251	238
Finland	584	370	280	250 ¹
France	3,558	1,845	620	370
Netherlands	487	315 ¹	535	522 ¹
Ireland	219	138	67	68
Yugoslavia	1,175	1,800 ²	—	—
Canada	4,650	3,727 ¹	1,725	1,785 ¹
Luxemburg	22.9	13.4	23	21.7
Hungary	1,633	1,420	—	270 ²
GDR	4,000 ³	4,000 ³	—	—
FRG	3,200	2,400	3,100	2,900
Norway	141	100	—	215
Poland	4,100	4,300	—	840
Portugal	266	305 ¹	166	192 ¹
Austria	354	170	216	216
Romania	200	—	—	—
Greece	800	720 ¹	127	150 ¹
USSR (European Part)	12,800	11,100	2,790	2,930
Sweden	483	272	328	305
Switzerland	126	95	196	214
USA	23,200	20,800	20,300	19,400
Great Britain	4,670	3,540 ²	1,916	1,690 ²

¹ values for 1983; ² values for 1984; ³ estimated values

Northern Bohemian Forests Still in Decline

90CH0052Z Prague MLADA FRONTA in Czech
10 Apr 90 p 7

[Article by Hana Vojtova: "Is Siberia in Northern Bohemia?"]

[Text] A well-developed tree produces about 2 kg of oxygen per hour. There are 800 trees per hectare. So that from 250,000 hectares of forest it is possible to obtain about 400,000 tons of oxygen. For Northern Bohemia, this is probably the specific substance of the saying—forests are our wealth.

But the calculations apply only in theory. The fact is, the property is in considerable disrepair. Emission of pollutants is the cause of destruction here. In the upland regions of the Krusne and Jizerske Mountains it has already killed 80,000 hectares of forests. The so-called

pollution-resistant species of trees, which are being planted in the bare areas, have a lifespan of only up to 20 years. Another 80,000 hectares of spruce forests in the Luzicke Mountains, in the Czech central range and in the Sluknov spur will die, if the situation does not change, in 15 years. The remaining third of the Northern Bohemian forests are in various stages of damage. A sad accounting, is it not? By the standards of the republic or by global standards it does not bear comparison.

Forests here have been classified as "special designation forests". It means that approval for their felling is given by the Ministry of Forest Management and Wood Processing Industry of the Czech Republic only after the most exacting consideration. As a result of that consideration, 100 hectares a year are harvested in the national interest. "I can name for instance the Radovesnice dump. Stripmining by the Julius Fucik Coal Mines Bilina already devastated 100 hectares of forest land. They do have the obligation to reforest the land, but it takes three to four generations before a forest climate reappears in the land, or, in other words, conditions suitable for forest cultivation," says deputy director of the forestry enterprise Litomerice Milan Tejkl. "Forest land is terribly cheap. If industrial enterprises pay compensation for deforestation in the hundreds of thousands, than the acquisition of agricultural land costs millions," adds a worker in the production management department of Northern Bohemian State Forests Teplice, Eng Otto Vrabec, and as proof of his statement he provides another example: "The Electric Power Plant Melnik also put its fly ash dump on 35 hectares of forest land, because for arable land from the production area on the borders of the Litomerice district it would have had to reach deeper into its pockets."

I learn about more and more examples. The Northern Bohemian Brown Coal Mines has taken over 2,000 hectares of forest land. Severokamen Liberec has a monopoly for mining gravel sand here. Its latest negotiations concerned the liquidation of 60 hectares of a tree farm in Vodomice in the Roudnice district....

More than 80,000 hectares of dead forests, with another third of the forests moribund, yet the industry in Northern Bohemia is still taking a big toll even of the last remaining relatively healthy forest stands. That is why the information given to me by the director of Northern Bohemia State Forests Teplice, Eng Frantisek Orsag, left me speechless: "In Bohemia, during the previous 5-year plans about 11 million cubic meters of timber were 'over-harvested,' and that includes our region as well. The plan wants as much harvested timber as possible, without regard to our situation. The Institute for Economic Forest Management in Brandys nad Labem processes wood 10 years in advance. I will insist on having it revised for the Litomerice and Zatec plants."

Does it seem to you too as if in Northern Bohemia they owned Siberia or Canada? The method of forest management points to that.

GERMAN DEMOCRATIC REPUBLIC**GDR Considers FRG's Environmental Protection Efforts**

90WN0009A East Berlin JUNGE WELT in German
23 Mar 90 p 6

[Article by Martin Woldt: "How Ecological Is the Social Market Economy?"—first paragraph is JUNGE WELT introduction]

[Text] There is hardly any dispute that an ecologically oriented social market economy is considered to be the magic formula for a future economic model. Following some sad experiences, the GDR is starting over for a second time to unite economy and ecology. JUNGE WELT examines several aspects of this relationship, using the "exemplary model" of the Federal Republic.

There was no outcry when the one-time status symbol of the throw-away society—the Cola bottle—made its entrance into everyday life in the GDR. Nevertheless, these objects could lead to the most disputed results in the new democracy. In proven manner, the critic of the Cola container could refer to the "environmentally detrimental system" in which it has resulted, yet this would be doubly dishonest. First, the planned economy—or that which we considered it to be for a number of years—created far too few convincing facts with respect to environmental protection. The opposite was more true. Second, it is precisely the market economy which, although it is no magic formula, has many people running after it in order to worship it as a new idol. We do not want to howl with the wolves, although anyone who regards the FRG as the "exemplary country" must first recognize a few facts.

In the market economy, it is primarily supply and demand which exert a substantial influence on the economic process and particularly upon prices. It is said that waste in production and in the consumption of natural resources is as good as eliminated under the whiplash of competition. Environmental policy is created by environmental levies, by stimuli, etc., as a result of price signals. All of this does not occur without the State—something which is being disavowed, among other things. But the State is needed, at the latest, in areas where the protagonists of environmental stress and damage cannot be or can no longer be identified. The state bears the elimination costs in accordance with the so-called common burden principle.

The Federal Republic has, undoubtedly, achieved considerable success in environmental protection in recent years. Here are some facts:

- More than 90 percent of households are connected to municipal wastewater networks. Some 84 percent of wastewaters are treated biologically. By 1985, the chemical industry was able to reduce the wastewater burden by 93 percent in comparison to 1970.
- The water quality of the Rhine River has significantly

improved. In the meantime, the river has regained a defensible oxygen content on average, its stressing by heavy metals has been reduced 90 percent. Some 31 species of fish again live in the river.

- The phosphorus content of laundry soaps declined from 276,000 to 80,000 tons (1970 through 1986).
- Since 1982, the Federal Republic has reduced sulfur dioxide emissions from 2.9 million tons to 1 million tons (1988). By 1993, plans call for the elimination of 75 percent of these emissions. By 1988, approximately 90 percent of all coal-fired power plants had been equipped with desulfurization devices. Old facilities which are no longer being retrofitted must be shut down by 1993.
- Today, 3,200 products are marked with the "blue angel" environmental symbol, including numerous spray cans whose propellant gases—the ozone-disrupting fluorchlorinated hydrocarbons will be 90-percent replaced by 1990.
- Since 1970, the use of water for industrial purposes has been reduced by approximately 1 billion m³.
- Industry does more than DM23 billion worth of business selling environmental protection materials.

With these results, the Federal Republic can certainly measure itself internationally and actually occupies a leading position in this respect in its own territory. There is no doubt of the fact that the state plays a role which is significant for these activities by making incursions into the price formation of the marketplace under pressure from the public by, for example, insisting on the so-called environmental levies. It happens to be a fact also, as FRANKFURTER ALLGEMEINE notes, that environmental problems arise in a market economy when environmental resources do not carry a price, although they are in short supply and are valuable. However, prices decide being in the marketplace or not... Things must be capable of being calculated for by entrepreneurs. This is the source of their flexibility and performance in the area of environmental protection. An inquiry organized by the Federal Association for German Industry indicates that more than 50 percent of the more than 400 interested entrepreneurs assign cost figures in their enterprise budgets to environmental protection.

And yet, the "cost factor" of environmental protection also gives rise to opposing views. Specifically, when the enterprises repeatedly search for new ways to circumvent existing environmental regulations. They do this for cost reasons and to gain more favorable chances in competition. An example of this is the export of toxic waste to the GDR dump at Schoenberg, which has been ongoing since 1974. These costs could be calculated at Hoechst, Daimler-Benz, or at the North German Affenerie Refineries. And this clashed in a fatal manner with the calculations made by Mr. Schalck-Golodkowski who, at one time, conducted the GDR waste transactions.

Waste is generally a problem in the Federal Republic. Politicians and environmentalists have for years spoken of a waste product emergency. Because of the fact that the construction of large incinerator facilities is very expensive and because many communities oppose the establishment of waste disposal facilities, the export of waste products to the GDR, to Turkey, or to West Africa, particularly with respect to toxic wastes, appears particularly lucrative. (To eliminate one ton of toxic waste in the Federal Republic, the enterprises involved must, nevertheless, come up with DM4,000.) In addition to exporting waste products, special waste is incinerated at sea openly or is discharged in the form of diluted sludge. The matter is a problem because the enterprises are not compelled to reveal the quantities of waste materials which occur and their composition so that waste product transactions are extremely difficult to check on.

An additional aspect involves environmental criminality, which has been on the rise for years. In 1987, the Federal Environmental Office identified 17,930 cases which were primarily violations of the waterway protection law. The tendency over recent years has been on the upswing. It would be possible to continue listing such facts.

As can be seen from the example of the Federal Republic, the market economy is absolutely in a position to create peak performances in environmental protection. Many enterprises in the Federal Republic meet the high requirements of the supply principle, of the avoidance of creating environmental damage. The prerequisite or the market-economic principle in this regard is that in so doing they should not have to pay out extra money. But something else is also becoming clear: matters of ecology do not become a reality in and of themselves even in a market economy. Modern environmental legislation in the Federal Republic came into being to a not inconsiderable extent as a result of the growing pressure by the public, particularly by the Green Movement. At the same time, numerous citizen initiatives led to the development of democratic elements of joint concern—elements which should not be permitted to fall beneath the table during the introduction of a market economy in the GDR.

A second aspect involved in the reshaping of GDR industry to market-economic requirements is the problem that the growing together of the two German states must not proceed without precisely negotiated ecological outline conditions. Any overly hasty steps must necessarily lead to environmental protection in the GDR being calculated at a better cost as a result of lax or nonexistent regulations than is the case in the Federal Republic. Despite the importation of supposedly more modern equipment, GDR citizens would not be the recipients of any favor in the sense of an environmental situation requiring fundamental improvement. And, at the same time, less stringent standards and limitations in the GDR lead to the undermining of standards achieved in the FRG or lead to prevention of the development of such standards.

Marketplace-Environmental Protection: Deliveries and Performances (estimated)

Item	1987	1995
Market volumes for German enterprises in millions of DM		
Air	565	1,090
Water	247	639
Waste products	205	604
Jobs	400	700

Some 34 million vehicles are currently licensed in the Federal Republic. They account for the highest share of air pollution involving nitric oxides, hydrocarbons, and carbon dioxide.

Local Press Reveals Scope of Atmospheric Pollution

90GE0064A Duesseldorf VDI NACHRICHTEN
in German 2 Mar 90 p 4

[Article by Christa Friedl: "Fed Up With the Filth—Air Pollution is the Number One Environmental Problem in the GDR—Air Pollution Equipment Remains to This Day a Superfluous Decoration"—first paragraph is VDI NACHRICHTEN introduction]

[Text] Magdeburg, 2 March (VDI-N)—Thick air is the rule rather than the exception. That is more literally the case in the GDR than in any other country. Cities and villages lie under an impenetrable veil of dust and fumes. In many instances, not even the local authorities or the representatives of industry know what is belching forth from the smokestacks. Billions from the West are supposed to salvage what is now hardly salvageable.

When August Bebel coughs, the citizens of Zwickau close their windows. Then thick smoke covers this city of 100,000 inhabitants in the South of the GDR. August Bebel coughs frequently: the drawing-off process is performed in the coking plant, which is located in the heart of the city, twice a day. Anyone living down-wind of it, does not dare open a window.

The August Bebel Works is a real polluter. Every day, 2,300 workers process 2,000 tons of hard coal into coke and gas, another 1,500 tons are burned as fuel in the adjacent power plants, so that 23,000 homes and 65 industrial plants can be supplied with district heating and electricity.

"Planning a coking plant in the middle of the city was one of the greatest mistakes in the history of the City of Zwickau." That was not a comment made by a Western environmentalist following a visit to Zwickau, nor was it something a resident said discreetly behind a masking hand—it is in the newspaper. Since the big change last November, the Zwickau FREIE PRESSE [Free Press] has been taking on the August Bebel Works. Ever since the secret status of environmental data was suspended

on 30 October, the citizens of Zwickau have been able to read in black and white what the status of their air quality is. On 20 January, the paper quoted the technical director as follows: "The energy policies of the old regime led us into a deep ecological crisis. A colossal amount needs to be done."

A table in the same newspaper, on page two, shows just how much. Where once SED functionaries [Socialist Unity Party of Germany] proclaimed their opinions, the FREIE PRESSE now lets the figures do the talking. Every day, in this spot, the paper publishes current SO_2 pollution levels in the Karl-Marx-Stadt District. The levels from Zwickau's center are the highest in the district. On 20 January, the maximum reading was 0.66 mg/m^3 , that is, 30 percent above the maximum limit. The average daily reading of 0.31 mg/m^3 surpasses the maximum allowable limit by as much as 100 percent.

"Millions live in permanent smog in our countries," says Eberhard Niemietz, ecologist in the Eastern branch of the SPD [Social Democratic Party]. As a result of the combustion of 320 million tons of coal per annum, 5.2 million tons of SO_2 were liberated into the air in 1989 (2 million tons in the Federal Republic). In addition there are 0.95 million tons of nitrous oxides from home heating and vehicular traffic (3 million tons in the case of the Federal Republic), as well as 2.6 million tons of dust (Federal Republic: 0.7 million tons). Regarding pollution from hydrocarbons, carbon monoxide, ozone, and dioxins, the GDR's environmental protectionists have heard tell of them. To quote Niemietz: "Our instruments cannot even measure nitrous oxides."

Environmental Protection Stops at Hygiene

Since the changeover, Bernd Thriene has been happy to receive journalists from the West. In his Magdeburg-based institute, the Chief Medical Officer and Director of the District Health Inspection Station can show a few things to the Westerners. Here one of the approximately 40 SO_2 measuring stations of the GDR can be found, here data are gathered from a total of ten air quality monitoring stations in the District of Magdeburg, here there is an analyzing laboratory for rapid use in case of accidents, and in the basement, there is even an electron microscope for measuring asbestos dust.

"Heretofore environmental protection was only an afterthought on the part of the authorities here," says Thriene. One glance at the laws is enough. The smog regulation is a part of the National *Cultural* Law, the monitoring of water and air, the responsibility of the Institutes of *Hygiene*. The law does make provision for environmental offenses, but in practice, the fines levied are not enough to deter anyone. The demands made by the Eastern branch of the SPD and the Green Party for firmly anchoring environmental protection to the Constitution, for democratically controlled Environmental Institutes, and stiff penalties for environmental offenses sound Utopian.

Unperturbed by campaign slogans, Thriene makes a concerted effort to address the daily concerns of the inhabitants of his district. "More and more frequently, people have telephoned this office wanting to know about the pollution of the water and the air." Only since October, however, has he been permitted to publish the measured results. To be sure, there are not many findings: SO_2 and free-floating dust in the air, nitrates, and fluorine in the drinking water—the superannuated equipment is unable to furnish anything more. And the new district radiological laboratory to monitor the amount of radiation in the environment will probably take some time yet to complete. To quote Thriene: "We have no tiles, no pipes, and above all, no skilled workers."

As a physician, Thriene is particularly concerned about the number of respiratory diseases. In the week of 18-24 January alone, 19,432 cases were reported—an average of every 50th resident of the district. How many of these can be attributed to airborne noxae is something Thriene cannot say. "No one has ever been able to study anything of the kind before." Even he is forced to make do with rumors. Thus, he heard that among children in the area of high industrial concentration around Bitterfeld, approximately 70 km south of Magdeburg, delayed bone growth and blood corpuscle anomalies were ascertained.

It has not been only since "the change" that the catastrophic extent of the air pollution in the GDR has been known to the West. It was the forest dying finally that made it apparent that environmental pollutants know no boundaries. In 1987, both German states concluded an environmental agreement that was basically limited to the exchange of measurement data—such as data on emissions from the hazardous waste incineration facility at Schoeneiche—and assistance in the construction of East Berlin's water purification plants. For years, negotiations had been ongoing concerning the establishment of a jointly-operated smog early warning system—without success.

A fresh wind has been blowing since the end of last year. With a total of two billion Western marks, the Federal Republic intends to clean up the air in the GDR. New desulphurization facilities for the Espenhain lignite coal plant and the "Max Reimann" heating facility should decrease the SO_2 pollution in the Leipzig District by 80,000 tons per annum. A heating and power plant with fluidized bed firing will relieve the air over Magdeburg of 11,000 tons of SO_2 . It is high time, as well. Official sources in the GDR made public for the first time that in the Districts of Leipzig and Karl-Marx-Stadt, 75 percent of the trees are already diseased.

New Smog Regulation Combats Daily Pollution

In practice, Bernd Thriene prefers rapid, unbureaucratic neighborhood assistance to tough political deliberations. Thus, his institute has been measuring the SO_2 readings in Magdeburg with the aid of an instrument donated by the Essen State Institute of Protection from Emissions.

Cooperation with the State of North Rhine-Westphalia was successful in another way. Since 9 November, the same SO₂ concentrations that would suffice to cause a smog alert in North Rhine-Westphalia are the guidelines required to do the same in the GDR. These are levels that would be sufficiently stringent to prevent the severest damage; if the sulfuric acid producer, the Fahlberg-List Peoples' Own Production Facility were not a kilometer away from the institute as the crow flies. This plant keeps the pointers of the measuring gauges busy.

Filtering plants are a rarity in the GDR. Due to the fact that they make no meaningful contribution to productivity, they are considered superfluous window-dressing. All that was left was the possibility to improvise. So, for some time now the Zwickau August Bebel Heating Works have been burning small granular Polish hard coal instead of lignite coal. The positive impact, in terms of emissions, is more than offset by other small heating plants in the city. And any time the air in Magdeburg got too thick, "we called them up and asked them to cut back their production," says Thriene.

The population is just fed up with the filth by now. The shouts "Close down" and "Shut it off" are becoming louder. Within a few weeks, the Church Ecological Council in Zwickau collected 30,000 signatures on a petition to shut down August Bebel, but the old man will continue to exist: *Bergbau AG Westfalen* [Westphalian Mining, Inc.] wants to give the plant the dust removal equipment from the Dortmund coking plant that was shut down.

"Nonsense," the environmentalists say, because the adaptations that would be necessary are technologically so complicated and so costly that it would be better to spend the money on a new plant.

[Caption for photo not reproduced: Thick air is normal in the GDR. In addition to pollution due to dust and exhaust emissions resulting from industry, household heating makes its contribution. And finally, three million Trabbis add their fair share. The two-stroke engines add carbon monoxide and hydrocarbons to the pollution.]

Organic Substances Cause Severe River Pollution 90WN0002A Erfurt THUERINGER ALLGEMEINE in German 12 Mar 90 p 3

[Article by Esther Rethfeldt: "Unclear to Death: A Stream Can Come Back to Life, If..."]

[Text] This tiny village is far removed from the hectic pace of any large city or small town. Only he who knows his way around in Soemmerda Kreis would be here. Therefore an idyllic Waltersdorf? No, because an idyll does not stink to high heaven as does the lake pool which flows by this little village. Mayor Juergen Schulze turned to THUERINGER ALLGEMEINE because this stream has since died. He was still catching pike in it when he was a child. Who is guilty of the murder of this stream?

Argument About Competence

We hear that the Weissensee Dairy is one of the sinners. In fact, in the main ditches which are called lake pools around Waltersdorf we do find pipes protruding and large volumes of white-colored liquid flowing out of them. We stand in front of it, shocked—is it actually so easy to be an environmental criminal? The ditches are on company land, and it is recognized that outsiders are not permitted in there. A little later, we are sitting with the company director Ute Detert at a table. And in silence, we apologize because we already condemned the company. The director is obviously happy to be able to speak about her problems: "I am not happy about what we are doing to the stream," she says, and proves it, because she has had a brisk exchange of letters with the state waterway control board and the Waterworks and Treatment Company (VEB [State enterprise] Wasserversorgung und Abwasserbehandlung—WAB). People are arguing about competency while untreated "water" flows into the main ditches.

Help from the West?

The Weissensee City Council is handling this problem differently. Although they have not been the owner for several years (that is now the VEB WAB Erfurt), the Mayor is not letting the issue of the dead river just drop. "A partnership with Kirchberg in Baden-Wuerttemberg is being worked out, and there are also contacts with Hesse. We are involved because people in the city and above all in the surrounding villages are affected. You cannot just point to responsibilities and close your eyes," believes Mayor Bernd Thomas.

The water treatment facility is completely overburdened. It was built in the 1930's and was large enough then to treat incoming wastewater. In the meantime, the capacity has been exceeded a few times and the machinery is overloaded. With all of that, the most beautiful spectral colors are shimmering in the main ditches. This bizarre color show can, at best, cheer little children; for others it is a sign of oil in the water! At first, the Minol large tank farm had trivialized its sins, but after a M 40,000 fine last year and renewed threats of another M 50,000 fine, a provisional oil separator was built.

A Glimmer of Hope

As hopeless as the stream's situation is—there are glimmers of hope. In any case, Uwe Mueller, in charge of the state waterway control board, Erfurt upper reach area, does not give up. "What use is it if I now complain that the waterway network of the past was often only a piece of yellowing paper? We must orient ourselves forward—for the sake of the next generation. For that reason, a new water treatment plant is urgently needed in Weissensee, or at least an expansion of the existing facility, through which the water can be directed in an oxidation basin to be built." Biochemical treatment belongs to the future. Because, beginning next year, even lower values are valid for sulfur hydroxide, for example. For the sake of the

environment. Uwe Mueller is optimistic that once the water treatment plant is in place, it will be three months until life returns to the stream. And then the Unstrut River will be somewhat cleaner again, because the mouth of the long-dead stream is on it.

POLAND

Environmental Protection Policies, Budget, Reviewed, Criticized

90EP0467Z Warsaw RZECZPOSPOLITA
in Polish 12 Feb 90 pp 1,2

[Article by Krystyna Forowicz: "Ecopolitics"]

[Text] Ecologists view as eyewash last year's decisions to shut down Siechnice Steelworks and the noxious production department of Celwiskoza [plastics] Plant in Jelenia Gora. It is no accident that these two scraps were thrown to the society before [last June's] elections to formally satisfy it. Formally only, because they caused no change in the domain which we term environmental protection (!).

Some hope for the solution of the urgent ecological problems was brought by the "round table" deliberations. Although their assessment would be premature, it must be admitted that the implementation of the "green" postulates is not producing satisfactory results.

What is more, the National Program for Environmental Protection has collapsed, as it does not fit the current situation. Substantial funds and tremendous efforts were invested, not for the first time, in creating something that turned out to exist only on paper, lacking financial credibility and public acceptance. The newly appointed deputy ministers of environmental protection are so caught up in current domestic and foreign affairs that they simply cannot catch their breath and attend to formulating a concept of environmental protection.

These and other anxieties are being voiced by activists of the Ecos Club (established under the League for the Protection of Nature) and by ecologists, that is, by experts on the problem.

The lack of a strategy of action as regards a new environmental policy and a kind of impotence displayed by the Ministry of Environmental Protection were manifested at a recent session of the Sejm Commission for Environmental Protection, Natural Resources, and Forestry, devoted to the budget [of the Ministry of Environmental Protection]. That budget provides for 272 million zlotys for educating the society in ecological knowledge and popularizing knowledge—meaning the cheapest form of environmental protection. In contrast, as for the funds needed for the research under way in the Pacific Ocean, whose meaningfulness could not be in any way demonstrated, these were budgeted at 31 billion zlotys. Several other comparisons are equally shocking. The draft of the ministry's budget does not include

such an important line item as [environmental] monitoring. And the total funds for environmental protection equal one half of the budgeted investments in water management (86 percent of the overall proposed outlays).

Ecologists are reddening with anger. A classical example of the confusion of concepts, which should be attended to by the Ministry of Environmental Protection, is the recently published list of the 80 worst poisoners. "Should the environmental protection departments of voivodship administrations determine the schedules for the construction or modernization of protective facilities, or should they attend to ecological changes in manufacturing technologies?" asked Dr. Andrzej Kassenberg, vice chairman of the Polish Ecological Club. It is difficult to disagree with him. These tasks belong in the purview of industrial plants, while the voivodship environmental protection departments should instead finally start issuing environmental protection regulations. When will the ministry stop acting as a sewage treatment plant cleaning up after the polluters?

Do we have at present any clear concept of an undisturbed economic growth consonant with nature?

Dr. Tomasz Zylicz, director of the Economics Department at the Ministry of Environmental Protection, views the matter Western style. In the highly developed countries (grouped in the OECD—Organization for Economic Cooperation and Development) the binding principle is that of responsibility of the environmental violators: the polluters pay. In practice this works as follows: The polluter invests in measures required to reduce the environmental pollution to the emission-norm level assigned to him. In other words, this principle simply means self-financing of environmental protection measures.

But what may turn out to be a genuine revelation, advocated in this country by progressive economists, is the free market for "trade in emissions" (that is, in waste removal permits). This form has tested itself in United States and West European practice. Will our local authorities like it?

It is our local authorities that would fix for their subordinate enterprises the permissible overall maximum of polluting emissions, or, in the case of liquid wastes, the quantity of heavy metals acceptable to the environment, without bothering to determine the maximums for individual enterprises. The enterprises could sell part of their emission norms to other users of the same environmental fragment. As a result of such transactions, the right "to litter" would be purchased primarily by those for whom the cost of environmental protection is the highest. And it is precisely these worst polluters that would be most anxious to purchase this right. Of course, only for a time, because at a certain moment the construction of liquid waste treatment plants or precipitation filters would prove to cost less than the buying of such permits. As for the sellers of emission rights, they

would be those for whom it is easiest to adhere to emission norms so that they have a "surplus" to sell and to profit from it abundantly.

There is also no dearth of opinions that, in an effective system for environmental protection, fines and penalties are a medieval relic. It is time to zryczaltowac the fines for environmental use, and as for the imposition of penalties it is, to say the least, pointless, because they absorb an enterprise's funds which could otherwise be used to finance measures for environmental protection, and thus they delay these measures. And as for penalizing the factories which are environmentally hopeless, this is nothing other than prolonging their agony. Example: the Hajduki Chemical Works in Chorzow, which should have already long ago paid many billions in fines for killing the Rawa River and for the toxic waste dumps around the Kalin Reservoir: The value of the entire output of that enterprise is much lower than the fines imposed on it over the years.

If room is found for innovative proposals in a future system of environmental protection legislation, this would mean the birth of our ecopolitics, economists say.

YUGOSLAVIA

Increased Support of Greens Seen

90EB0279Z Belgrade EKONOMSKA POLITIKA
in Serbo-Croatian 5 Feb 90 pp 13-14

[Article by V. Karakasevic: "Ecology—Greens Climb to the Top"; first paragraph is EKONOMSKA POLITIKA introduction]

[Text] Air, water, and food increasingly hazardous to your health—Yugoslavia needlessly polluted—From sympathy towards the "greens" to political support.

Representatives of the ecological movements, initiatives, and parties recently demanded a meeting with FEC [Federal Executive Council] President Ante Markovic in order to draw his attention to the need for an energetic program to protect natural resources, and to fight against pollution and polluters. Naturally, they will also ask for support (social and material) for their activities, and well as a clearer definition of the role and status of their organizations in the sociopolitical system.

The people "in charge," who prior to the greens concerned themselves with protecting the water, air, land, forests, on so on from pollution, have obviously fallen very short of their goals, and the money and resources that have been devoted to these activities have not been justified. In truth, these resources were not that great, but they do include all the massive equipment and installations for cleaning up hazardous water and gases, which in many cases were in operation only for a test and demonstration period, after which they remained out of service.

In any case, the fact is that in Yugoslavia, pollution of some parts of the Adriatic coast and of nearly all the rivers, lakes, land, forests, and air, has reached a level that already constitutes a serious danger to the health of the population and is inflicting permanent damage on nature and her resources. A particular problem is posed by the fact that a large number of the toxins from the water and air settle in the fields, gardens, orchards, and pastures, thus remaining, like permanent ingredients, in bread, meat, milk, fruits, vegetables, etc. Some of these dangerous substances are permanently retained by the human body, and are passed on to new generations through birth. It is clearly too early to expect human mutants, disfigured by and adapted to a toxic environment, but there is already evidence of some types of degenerated fish, rodents, microorganisms, and so on. The special factor in the Yugoslav situation is that in our country the people intentionally poison the land and food excessively—with pesticides, substances that speed the germination, growth, and ripening of fruits and vegetables, weed-killers, and similar toxins—"so that they grow better and faster and look better." Because of improper use of artificial fertilizer, our fertile land and food have been contaminated with radioactive uranium. This is not to say that there is no agricultural or other producer in the world who would want to increase his production and yield using dangerous substances; rather, the issue centers around the system of standards, regulations, and controls under which it is simply not permissible to sell goods with harmful, unhealthy, and dangerous ingredients. But it is precisely these things that are missing in Yugoslavia. In fact, we have 375 laws and around 2,000 acts on the books concerning ecological and similar protection, but not even 10 percent of the needed standards have been established. To a large extent, no one even knows what is actually going on. As noted at a conference, of the approximately 80,000 chemical substances in use in Yugoslavia, we do not know anything about the toxicity of 38 percent, while we do know about 10 percent (the rest are somewhere in between).

The system of controls too is utterly rudimentary, and is often reduced to ordinary tests—for example, to see whether meat is tainted, how much bacteria there is in dairy production, and so on. And even where there are good regulations and safe standards, the local inspection authorities are more often than not prohibited from intervening—to prevent harm and bother for the mainstays of the local economy. As it is, the majority of the dangerous goods will be sold to others, and hazardous water and gases will flow and blow away to other areas.

In general, some of the greatest polluters in Yugoslavia are thermo-electric power plants, which discharge enormous quantities of sulfur dioxide into the atmosphere. Once there, this gas mixes with water vapor, giving rise to dangerous and harmful "acid rain," which is in fact more or less dilute sulfuric acid. At one point, the Canadians requested compensation from the United States for damage to their forests and everything else

caused by acid rain, or in fact by sulfur dioxide from American energy and industrial plants. There, it is thought that the conditions for ecological catastrophe are present if more than 30 kilograms of sulfuric acid fall annually per hectare. If all our thermo-electric plants operate at full steam for two years, 60 kilograms of acid will fall in Yugoslavia per hectare. But currently, in areas where our biggest thermo-electric power plants are located (which covers half of Yugoslavia), more than 90 kilograms falls per hectare, while in some places, which "feature" two or three plants, that figure is more than 300 kilograms. Ten years ago in Yugoslavia, 588,000 tons of sulfur were discharged into the atmosphere; five years ago it was 725,000 tons, but right now that figure is unknown. Our forests are withering from too much acid—it has been established that one tree in three has been damaged.

More and more cities, which are literally no longer fit to live in, are choked by enormous quantities of toxic gases and other materials from waste emissions from industrial plants. The most drastic example is Zenica, on which 72,000 tons of sulphur dioxide and 24,000 tons of dust fall each year. But in terms of pollution and the threat to the population and to nature, many places are close on its heels—Titova Mitrovica, Bor, Pancevo, Zajecar, Rijeka, Titov Veles, Pljevlja, etc. Even Mostar is among the cities with excessive pollution from industry, the city that not that long ago was the symbol of the unblemished and healthful settlement.

Our rivers, lakes, and seashores should be classified in the second group in terms of cleanliness. However, the result of every survey is that they fall into the third or fourth class, and with increasing frequency outside the class, which means that they have become mere collectors for contaminated water.

Goliath Has No Chance

We will write about all these individual aspects of pollution and protection of our natural resources in upcoming issues, while two more facts could be noted here. The first is that in Yugoslavia there is not complete agreement concerning the level and dimensions of pollution, not even among experts; some of them emphasize, for example, that our land is incomparably healthier and cleaner than anywhere else in Europe, and that our big opportunities are precisely in the production of food. But even this difference of opinion shows that the

ecological situation in our country has yet to be examined adequately. The second fact is that nearly all industrialized, developed countries had to go through a "dirty" phase of industrialization and development in order to later install technology on a cleaner level. However, these countries made solid gains from that dirty phase and produced a high material and living standard for the population. We, on the other hand, have paid dearly to import this dirty technology and have polluted the environment needlessly, because we have failed to profit from it and have remained at a low standard, and we lack the accumulation to import cleaner technology.

In a situation like this, the movement and message of the greens—various groups, organizations, initiatives, and parties for protection and promotion of the natural and human environment—have become increasingly clear and vocal throughout the country, especially over the last couple of years. Their self-organization has already achieved the goal of coordinating activities on a pan-Yugoslav level—at the First Yugoslav "Green" Conference in Split, 10 days ago. Besides presenting ambitious and joint programs for activities, the representatives of the ecological societies had to establish a basic fact as well—that their individual and combined forces are too small to be able to contend successfully and on equal footing with the Goliaths of the sociopolitical communities and of the industrial polluters. The first reason is that they are institutionally denied the opportunity to participate in decisionmaking on any level and segment of the sociopolitical and economic system (or even to be present during decisionmaking). Because of this, there is growing support among ecologists for the idea of transforming their movement into a responsible sociopolitical party, which would join the electoral system and in this way gain participation in decisionmaking. A "green" party has already been founded in Slovenia, and similar attempts are under way in Croatia and Serbia. Thus, along with ecological problems, the "greens" are also advocating changes in the electoral system, because the only chance that their representatives have of getting into legislative bodies is with the so-called proportional electoral system (at present, all the republics except Slovenia have the majority system). But whatever the result of the political struggle in this first round, the "greens" are receiving and will continue to receive greater support from society and from the citizenry, who are no longer putting up with being poisoned—not for material gain, and even less so in the absence of these gains.

HONDURAS

Effects of Growing Deforestation Noted

90WN0022A San Pedro Sula LA PRENSA in Spanish
6 Apr 90 p 4

[Text] Tegucigalpa—The government needs about \$75 million to replace the losses caused by the merciless destruction of forests and forest fires. This was stated on 5 April by officials of Cohdefor [Honduran Corporation for Forest Development].

At a meeting between Porfirio Lobo Sosa, the director of Cohdefor, and his close associates the latest data on tree felling was made known. The destruction of the forests is slowly condemning the country to being turned into a desert.

The Nicaraguan Resistance (the Contras) and Nicaraguan refugees are responsible for the destruction of large areas of deciduous forest. According to figures provided by Atilio Ortiz, the director of the Department of Forests, about 8,000 hectares of forest have been cut down, and 80,000 additional hectares have been burned off.

In the El Paraiso area in 1989 about 12,000 hectares of deciduous forest were cut down. It is estimated that the loss in timber was equivalent to 10,000 hectares, not counting the ecological damage, according to Cohdefor officials.

Gustavo Morales, technical adviser of the Office of the Director of Cohdefor, said that in the past 20 years the deciduous forest has been reduced by 40 percent. The pine forest was reduced by 13 percent. Each year 100,000 hectares are destroyed. For that reason there is an urgent need for efforts to be coordinated to make the slogan, "For a green Honduras in the year 2000," a reality.

According to Cohdefor data, about 48,000 hectares of forest were burned off in 1989. During the same period Cohdefor employees brought 2,000 fires under control. However, it was not stated whether those responsible were punished for their actions, as provided for by law.

Regarding the destruction of mangrove swamps to create ponds for raising shrimp, he said that this had probably happened. However, he limited himself to describing the programs for protecting Cohdefor forests by seeking to find ways of restoring mangrove plantings in the devastated areas.

The destruction of mangrove swamps resulted in a reduction in the flow of water in the river basins supplying water to the principal cities of the country. Over the past 5 years there was a reduction of about 40 percent in the flow of water. Deputy Director Leonel Guillen stated: "If we continue in this way, we residents of the principal cities will have to carry water in from the ocean."

At the same time Guillen stated that in Choluteca several entire communities which had existed for up to 100 years have had to move because the streams and small brooks disappeared which once were their sources of water, an essential element for the survival of humanity.

Among the causes of the destruction of the forests were the increase in population by about 3 percent annually, which means greater pressure on the land; the fires used by farmers as a rudimentary technique to plant their fields; an expansion in agricultural activity, such as the cultivation of coffee; and shrimp raising in the southern part of the country.

Other causes of the destruction of the forests include the rains which carry away fertile layers of earth down to the sea and the use of the forests to provide firewood for small and medium-sized industries, which use about 7 million cubic meters of wood annually, in addition to domestic consumption of firewood, for which there are no specific figures.

To the foregoing may be added the appearance of plant diseases which are apparently destroying the forests. At this time there is a plant disease in the Department of Olancho against which urgent measures have been taken. Existing legislation points in opposing directions. On the one hand livestock raising and the cultivation of coffee are encouraged in areas which should not be used for these purposes. Other laws contain contrary provisions.

For his part the director of Cohdefor recognized that the changes called for by President Rafael Leonardo Callejas in the management of forest resources will be tried out over the next 3 years, with action to be taken to preserve forest reserves, in coordination with the different state departments and the Armed Forces.

Therefore, he stated that at a recent meeting held with Arnulfo Cantarero Lopez, the commander of the Armed Forces, Lobo Sosa requested logistical support and human resources to undertake a campaign to protect existing forests and a massive reforestation program at the national level.

Lobo Sosa pointed out that courses should be included in the study programs of primary and secondary schools to inform the people about the need to plant replacement trees for those which have been cut down.

He added that at this time a committee is analyzing forest management as a whole, forest industry, the training of technicians, and the forest setting, as well as the possibilities for turning over to the private sector the sale and industrial use of wood and the conversion of Cohdefor into an institution for the regulation of those resources.

Ecological Devastation Endangers Tegucigalpa Water Supply

Deforestation Affects Capital

90WN00064 *Tegucigalpa EL HERALDO in Spanish*
21 Mar 90 p 20

[Article by Jenny Lavaire]

[Text] The destruction of the forests becomes greater with every passing day; the river basins are emptying; and Honduras is looking increasingly desolate and dry. Damage is done to 10 hectares of woodland every day, leaving a negative annual balance of more than 80,000 hectares cut and burned.

In the Central District alone, there have been 44 fires this year, which destroyed 425 hectares of woodland. According to the information gathered, the destruction of the forests is increasing by 20 percent each year.

With the presence of refugees in the country, the felling of trees has increased 30 percent in the La Mosquitia area alone, while in the other regions where foreigners also have been welcomed, excessive deterioration of the water basins and the extinction of fauna have been reported.

Tegucigalpa is one of the cities which finds itself most affected by the cutting and burning of the forests. This destruction is to be seen on all four sides of the city.

The zone most seriously affected by the irreversible felling of trees is the mountain named Yerba Buena, located to the southwest of the capital. It is there that the Guacerique River, which supplies the Los Laureles Dam, the source of the water for the capital's population, rises.

The basin of the San Jose River, located on that same mountain, is also being systematically destroyed. This is creating a situation which is serious, since this river is the main source of supply for the Concepcion Dam, which was designed to provide the citizens of the capital with water in the near future.

Dam Flow Down

According to National Water and Sewage Service (SANAA) reports, the flow in the rivers supplying the Tegucigalpa dams is being reduced by 20 percent every year, with the result that 50 percent of the people in the capital are without a water supply.

All of the higher zones in Tegucigalpa have been without water for 2 years now. A little reaches them from time to time, but it is not enough even to satisfy thirst, because it is available for only 10 minutes at a time.

The SANAA authorities began to ration water at the end of February, but the situation is becoming more acute, since it has been noted that even in the low-lying zones, no water is available for periods of up to 2 consecutive weeks.

During the entire summer, the majority of the citizens in the capital spend time hauling water from rivers near the city, while vehicles selling water crowd into the slums and poor quarters to make a profit by charging the customers 2 lempiras per barrel.

A Sociocultural Problem

This week, four Public Security Force (FSP) agents and Honduran Corporation for Forest Development (Cohdefor) authorities arrested seven peasants in a settlement called Copanton, located about 15 km to the southwest of Tegucigalpa.

The peasants were destroying an area owned by Mr Manuel de Jesus Gomez, who reported them to the Cohdefor authorities. It was learned that the residents in this area have been felling trees in order to sell firewood to dozens of truck drivers for more than 4 years.

The individuals arrested were Pascual Zeron Amador, Jesus Antonio Lopez Turcios, Santiago Antonio Lopez, Pedro Benito Lopez, Jose de Jesus Lopez, and Julio Cesar Nunez. They were turned over to the Third Police Squad in the La Granja district and were later taken to police court, where they are currently being held.

At the time they were surprised by the police, the peasants were cutting down all the surrounding pine trees, left and right. Forest destruction in the area is estimated to have claimed more than 40 hectares.

Those arrested are poor people who have spent much of their lives engaged in the cutting of wood for subsistence. The firewood is sold at a low price to the truck drivers who scout the zone every day.

Jose Emilio Cabrera, the Cohdefor technical engineer, says that more than four large trucks range this area daily to load firewood. Each vehicle takes 25 loads out on each trip, which means that more than 100 truckloads of firewood are taken out of this forest every day.

According to this technician, the woodcutters are required to obtain a special permit from Cohdefor, which calls for payment of 1 lempira for each load of wood cut.

Cabrera said that the peasants are not to blame for engaging in woodcutting, because the poverty in which they live forces them to do so. In addition, these individuals have no understanding of the consequences resulting from the destruction of the forests.

These peasants cannot be released from jail unless they pay a guarantee based on the extent of the forest destruction. This would not be very costly, but if the owner of the property chooses to file a complaint against them, they would have to deposit a larger guarantee.

However, the police authorities and Cohdefor itself are being criticized for arresting only the humble peasants

who engage in the cutting of trees, while they do not bother the major exploiters of timber who have reduced vast pine forests to rubble.

Demand in the Capital

Cohdefor has established that firewood can be cut only in Lepaterique and Ojojona, Francisco Morazan, because these are areas in which there are no river tributaries. However, those individuals who want to engage in this work must join Agroforestry Cooperatives.

There are individuals in all parts of the country (truck drivers) who take firewood out illegally. Fines ranging from 200 to 3,000 lempiras have been established for this violation of the law.

In many cases, the percentage they have to pay depends on the amount of wood they have. For each load of wood in excess of the legal limit in their possession, they are charged 3 lempiras and 33 centavos. The money collected is deposited with the Cohdefor Fund Department.

On the basis of the studies carried out, it is estimated that 70 percent of the inhabitants of Tegucigalpa, all of them residents of the poor districts, use firewood for cooking.

The demand for firewood in the capital is so great that 80 percent of the bakeries use firewood, and only 20 percent of the bread is produced with equipment which burns diesel oil as fuel.

Reservoir Endangered

90WN0006B *San Pedro Sula LA PRENSA* in Spanish
19 Mar 90 p 9

[Text] The residents of nearby Villa de Cofradia are worried about the latent threat of finding themselves without drinking water because of an ore-mining operation on the hill known as El Negro.

The fact is that for 5 years, three companies—La Cofradia, Pedrera, and Holit—have been extracting a material they call stone, but which the residents can prove is a material which appears to be more of an iron ore mixed with other metals.

This hill is located adjacent to the dam which collects the water to supply this settlement, and the constant use of dynamite charge has caused cracks through which the river water seeps away. As a result, its flow has dwindled to the point that the dam reservoir, which has a capacity of 50,000 gallons, only contains 2,000, although the summer has just begun.

The reserve tank, which holds 17,500 gallons, is almost empty, so that the Municipal Water Division (DIMA) has been forced to institute strict rationing of this vital fluid.

The residents of the area have attempted to discuss the problem with the enterprises in question, but no one will listen to their complaints. Because the companies have continued their activity, the residents decided to present the following charge through the media.

"If our voice is not heard, we will find ourselves under the painful obligation of taking other steps before we are left without water, to suffer all of the calamities which this would represent," a Cofradia management leader commented.

EGYPT**Environmental Radiation Test Plane Bought**

*90P40018A Cairo AL-AKHBAR
in Arabic 19 Mar 90 p 6*

[Report by Muhammad al-Shamma']

[Text] Egypt has contracted to buy the latest aerial reconnaissance airplane equipped with the most advanced geophysical and navigational instruments of the Centrex model. The aircraft is used to define radioactive rock and mineral areas and conduct environmental radiation surveys to determine current environmental radiation levels and what may happen to them in the future as a result of nuclear radiation accidents, either domestically or abroad. These instruments are distinguished by the fact that they accomplish these missions less expensively than a land survey and reconnaissance of the same area would in a very short period of time.

The aircraft will arrive eight months from today, according to Dr. Husayn 'Abd-al-Muhsin, president of the Nuclear Substances Authority.

He said that the aircraft and similar advanced systems represent the backbone and central nervous system of radiation research, exploration, and reconnaissance operations. He added that the aircraft costs 9.26 million Egyptian pounds and includes: supply operations for the Chinese-made Y-12 aircraft; Canadian-manufactured Centrex equipment, instruments and accessories; the necessary spare parts and crew training in Egypt; and the training and testing abroad for geophysicists, electronics engineers, pilots and aeronautical engineers in both Canada and China for a month and a half altogether.

The field survey operations will begin immediately after receipt of the aircraft and will cover 75 percent of Egypt's land to determine the locations of radioactive ores and related minerals from different natural metals deposits, define the geological structure, and perform a radiation and environmental survey for Egypt's Eastern, Western, and Sinai Deserts.

Goskompriroda Chairman Vorontsov's Effectiveness Evaluated

90US0705B Moscow SOVETSKAYA KULTURA
in Russian No 10, 10 Mar 90 p 5

[Article by B. Yunanov: "A Scientist in the Office of the Ministers"]

[Text] "According to my views, I am a convinced 'imperialist'", he declared to all listening. In the hall, they began to smile perplexedly.

"Yes, I really think that the only empire on earth is the biosphere and it should last for centuries. The main question is: In what condition...?"

A foreign colleague, who was sitting next to me, hurled at his neighbor: "A new man." Nikolay Vorontsov, the new chairman of the USSR State Committee for Protection of the Environment, was holding a press conference for Soviet and foreign journalists in the Ministry of Foreign Affairs press center. The foreigners were filled with curiosity. The Soviet ones, you can imagine, were also. For example, I could not understand for a long time why this individual, despite the traditional dark suit, white shirt and tie in severe tones and with a retinue to the left and right that is indispensable during public presentations, nevertheless did not in any way personify the typical model of an apparatchik who is gradually and purposefully rising to the head chair. Suddenly, it dawned on me: It was his Russian language. Fluent, picturesque, and absolutely grammatically correct. Second, there was his mastery of the ability to "reveal himself to the people" instead of limiting himself to the stereotype canons of nomenclature etiquette.

Nikolay Vorontsov is a scientist and he has a different biography. In science, there is a particular speciality. He is a zoologist and a geneticist—do you understand? When you begin a life in science with the struggle for your right to work, you do not worry about official etiquette. The independence of scientific thinking was logically transformed into independence in his public position.

A WASHINGTON POST correspondent asked the first non-party union minister in the history of the Soviet state: "Are you not lonely in the government? Do you plan on joining the Communist Party?" Evidently, not having thought about whether "you sympathize with the ideals expressed in the 'Manifesto of the Communist Party' by the classic Marxist writers and whether you share them"—the question is an unprincipled one. It is "one of principles" if you are chairman of the Supreme Court or General Procurator: Then, it is necessary to leave any party in the name of 100-percent impartiality. Being a people's deputy, Vorontsov did not conceal his position from others.

There is another "Vorontsov effect"—he, you can check it, is well oriented on the problems connected with his new position. And this is not at all a euphemism. As P.

Shelest recalled about himself, one can demand a "minimum of three years" to "delve into the affair" but during this "minimum" the affair radically changes....

Nikolay Vorontsov left his academic office quietly in order to engage in general compulsory ecological education:

"It will not disturb my minister colleagues, I am convinced of this."

The "polluting" branches will not surrender. What will he reply to them—slogans? Did you see how many of them there were on ecology during the 7 November demonstration? TIME magazine, for example, noted it.

Other ministers tried to find out from Vorontsov: "Your work?" He replied "My!" as a joke and seriously.... You see, it is necessary to begin with something.

Reymers on Environmental Policies, Work of Ecological Union

90US0658B Moscow SOBESEDNIK in Russian No 3, Jan 90 p 9

[Interview by Maryana Makarova: "We Will Be Saved By...the Hopelessness of the Situation: How Doctor of Biology Nikolay Fedorovich Reymers Views the Country's Ecological Situation"]

[Text] ...At the end of the fifties, when the wished-for "thaw" had come to many sciences, ecology was not rehabilitated. In one of his speeches, N. S. Khrushchev announced: "An ecologist is a healthy guy in boots who lies behind a hummock with binoculars and watches a squirrel eat nuts. We can manage quite well without these bums." N. F. Reymers was at that time working in Irkutsk, at the Institute of Siberian and Far Eastern Geography, when he came to understand that here, as well, there was no need for ecologists...

Years passed... Nikolay Fedorovich managed to receive an education in sociology, and has worked at the Central Institute of Economics and Mathematics for 16 years; occasionally, he is cited in specialized literature as an economist. But, all the same, he has not given up ecology.

[Correspondent] Nikolay Fedorovich, has ecology as a science always been unlucky in Russia?

[Reymers] As an independent branch of knowledge (a living thing's view, man's included, of his surrounding environment and his interaction with his environment) ecology made itself known in the last century through the works of Western scholars. At that time, Nikolay Severtsev had laid the foundations for an ecology of animals in Russia, and the science could have developed with some success, if the entire first generation of Russian ecologists had not been wiped out in 1932. Our great scholar, the forefather of the modern concept of wildlife preserves, Professor Kozhevnikov, received notice on cheap cigar [papiroza] paper that his services were no

longer necessary to Moscow University. By 1948, Professor Formozov's Mendelians and Morganists had been taken away, dealing the final blow to the old generation.

The last few decades have also presented many obstacles. In 1970, the so-called "group of seven," of which I was a member, prepared a report for the higher organs on the country's ecological situation. As a result, a resolution was adopted that restricted in the future all materials on ecology, including that report. Supposedly, they even took the carbon paper away from the secretaries who typed it.

But after a year the situation changed suddenly. He, who up until recently had considered ecological problems a peculiarity of the bourgeois world, began to call them our, socialist, problems. Since then there has been a slow reanimation of the science of ecology...

[Correspondent] Which will probably last longer than just one year, as our experience with the "disfavored" sciences—genetics, cybernetics and others—has shown? Is it because of this that we should speak of the new generation of our own ecologists in the future tense?

[Reymers] This may be an exaggeration, but the joke is still being told: you can count our ecologists on one hand without taking your mittens off. Now, the first ecology department in the country has appeared at Kazan University. But in order to prepare students, you need professors. And there are none.

Last year, when the opening of an ecology section at the Academy of Sciences was being discussed, the academicians began to contend that everyone should be concerned with ecology, and distributed the money that had been allotted for the section among their own institutes.

[Correspondent] The understanding of "pure" science is fairly conditional, especially today. It is impossible not to notice the connections between ecology and politics and economy. We even call the Aral and Caspian problems first of all socio-economic.

[Reymers] For a long time it was suggested that ecology and economy were located at different poles. In the end, it became necessary to admit that this idea was wrong. Now, it is a secret to no one that in many developed countries a goal-oriented ecological policy is being pushed to the fore, with the purpose of limiting pressure on the biosphere.

[Correspondent] Is the assertion fair, in your opinion, that the lower the standard of living, the worse ecological problems are?

[Reymers] Indeed, in countries where poverty reigns, people forget about ecology. Then, as the national income increases, many people begin talking about it, and at the third stage they are already doing something about it. In practice, it looks like this. In India, which is on the brink of ecological catastrophe, people are still

saying very little about it. In China, they are only beginning to talk about it. In our country, people are now saying a lot.

Because it is possible for harmful substances to be carried across borders, the developed countries are concerned that they not suffer from countries in worse ecological situations. For example, our plants on the Kolskiy Peninsula worry the Finns a lot, and they are even prepared to give us aid.

[Correspondent] A few months ago, our representative to an international inter-governmental meeting suggested mutual ecological monitoring. Are we ready for this sort of step?

[Reymers] In my opinion, our country is in such a condition that we are ready for anything. But is it really a matter of monitoring? It is time to act.

[Correspondent] The Law on Environmental Protection is now being prepared in the USSR Supreme Soviet, and the draft of a Law on Private Property is being discussed. Many specialists and deputees feel that these measures will give serious incentive in the ecological problems...

[Reymers] To paraphrase Pushkin, I will say that there are no laws for Russia. We have a wonderful RFSFR Law on Environmental Protection, but it has never been used by anyone...

[Correspondent] On the government level, our ecological interests are supposed to be protected by the USSR State Committee on Environmental Protection [Goskompriroda], which was created a year ago. Is it possible that it will be able to oppose departmental monopolism?

[Reymers] For almost 70 years the public has talked about the necessity of this sort of all-union organ, but when it was created, people suddenly realized that it was just one more bureaucracy, and one deprived of any sort of decisive rights at that. The fine for polluting is, under our conditions, just an administrative coercive measure, not an economic one. We must introduce payment for the use of natural resources. But Goskompriroda is not a legal person, and is unable to collect payment in the government's name. In the same way, there is no single chain of ecological regulation. If the matter continues to move in this direction, it will be difficult to expect any sort of positive effect from the Committee, no matter who is working there.

[Correspondent] Lately, there has been a literal explosion of community activism concerning our own ecological problems. People are already not just talking a lot; they are picketing and boycotting, they are organizing politically—now we have our own "greens." How do you, as a professional, feel about this?

[Reymers] I am very calm about this. Today, the community ecological movement is much like grape juice: just as likely as it could become good wine, it could turn into vinegar. Of course, people definitely should have the opportunity to express their concern. It is bad that they

are starting to quarrel with each other, and to set up spheres of influence, as if they had different goals.

In the West, also, there was a stage of youthful uproar and attractive slogans. Then there was a period of gradual consolidation and mutual understanding of the problems. The third stage was when they realized that an uncoordinated movement was not capable of achieving success. It was then that the "green" parties arose, which have been able to develop positive programs and to participate actively in parliamentary functions.

[Correspondent] The USSR Ecological Union has been in existence for almost a year, and you are chairman of its bureau. What place does the Eco-Union plan to occupy among the multitude of analogous organizations, associations, and societies?

[Reymers] We are attempting to start from the third stage, to unite those collectives and those people for whom a high level of professionalism in the solution of ecological problems is important. Our motto is—fewer emotions, more concrete actions. Institutions, ministries and departments cannot be members of the Eco-Union, but they are permitted to take part in its activities on condition that they observe the principle that "Plato is my friend, but truth to me is dearer."

Unfortunately, we have been waiting for our *de jure* appearance for too long, so we are only now getting into a working mode. How work will go in the future will depend on many conditions, including the popularity or unpopularity of our actions. Today, we have twelve projects for various general ecological problems, for example, some that are energy-related, and the ecological catastrophe zones—Central Asia, the Black Sea, Katun. The Eco-Union does not pursue commercial goals, although in order to implement the projects, the creation of economic accounting [khozraschet] scientific production complexes and cooperative associations has been proposed. By local request, we can apply our ecological expertise and express our opinions in, for example, the periodical bulletin *TOCHKA ZRENIYA EKOSOYUZA* [The Eco-Union's Point of View].

[Correspondent] At the end of our conversation I would like to take advantage of your gift for scientific fortunetelling. Already today, according to the statistics of Western researchers, 500 million victims of ecological catastrophes have been counted. What awaits us?

[Reymers] I place myself in the sly category of optimistic pessimists and pessimistic optimists. We have, essentially, no choice, because only one choice out of the two is possible: either we improve the situation radically, or we cease to exist as a civilization. But we all want to live...

Draft State Ecological Plan Outlined

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[Text] The theme of ecology is of concern to everyone, without exception: rivermen, metallurgists, and journalists. For we all are inhabitants of earth, and every year it becomes more difficult to breathe because of the abundance of industrial giants that dirty the atmosphere with harmful emissions. Criminal negligence of nature has led to the need for the expenditure of many billions and for a statewide program to preserve the environment in which people live. The draft of such a document was examined at the latest session of the USSR Council of Ministers Presidium. Finishing touches will be put to it for a month, and then it will be passed on for nationwide discussion. What about this document? The details are given in an interview with the deputy chairman of the Council of Ministers' State Commission for Emergency Situations. Our correspondent Valeriy Kiosa, met Aleksandr Pavlovich Tsygankov. Here is part of the conversation.

[Begin recording] [Tsygankov] In essence, the program is divided into two stages. The first stage is in the 13th 5-Year Plan, in which it is intended, and really desired, to avoid further deterioration of the state of the environment in the areas and towns where the least favorable ecological situation has formed already, and to create in this period, the first stage, the necessary production base—some work in advance, so to speak—so that in the second stage, by the year 2000, the content of harmful components both in the atmosphere and at water sites will be brought to a tolerable level, so as to embark on improving the ecological situation in our country by the year 2005.

[Kiosa] The implementation of all the measures included in the program probably will require large funds. Where are they to come from?

[Tsygankov] The capital investment needed for implementation is reckoned at something of the order of R150 billion. In particular, it is intended to allocate R41 billion to science. Naturally, it is simply not very credible to speak of allocating this in a centralized way, from some common pocket of ours. Here we will need to rework in the future the whole economic mechanism for implementation of the program. It has to be remembered that every enterprise bears full responsibility for carrying out measures to avoid pollution of the natural environment.

[Kiosa] We have had many and various programs in the economy, but regrettably, not all of them have been fulfilled. Tell us, please, in your opinion, where is the guarantee that this program, which has importance first and foremost for people's lives, will be fulfilled?

[Tsygankov] Very well, a long-term state program of a union nature has to be based on the totality of all kinds of local programs that will set as their aim precisely those

goals that are close and understandable for every person living in this or that town, rayon, oblast, or republic. [end recording]

Commission Official on Implementing Ecological Urgent Measures Legislation

90US0707B Moscow PRAVITELSTVENNYY VESTNIK in Russian No 10, Mar 90 p 3

[Article by A. Tsygankov, deputy chairman, USSR Council of Ministers' State Commission on Extraordinary Situations: "What Will We Leave to Our Grandchildren and Great-Grandchildren?"]

[Text] The government has embarked upon the realization of the USSR Supreme Soviet resolution, "On Immediate Measures for Ecological Revitalization of the Country". A. TSYGANKOV, deputy chairman of the USSR Council of Ministers State Commission on Extraordinary Situations, tells about the first steps taken in this direction.

The USSR Supreme Soviet proposes that in a year or two we achieve a significant breakthrough in environmental protection, not only by curbing the growth of negative phenomena, but also by stopping this process and turning it around. The most serious tasks in this resolution are directly addressed to the USSR Council of Ministers which, in turn, has worked out a set of measures or, if you will, a plan-timetable for the realization of specific measures in the entire system of state management. Finally, after sharp discussions, this was included in the appropriate resolution. We might add that much of what is embodied in it had already begun to be implemented much earlier.

The draft of a long-term state program on environmental protection and rational application of the country's natural resources for the 13th Five-Year Plan and for the period to the year 2005, prepared by the union Goskompriroda [State Committee for the Protection of Nature], GKNT [USSR Council of Ministers State Committee on Science and Technology], Gosplan, Goskogmidromet [State Committee for Hydrometeorology] and the Academy of Sciences, has already been submitted to the USSR Council of Ministers. This draft must be developed as soon as possible, bringing it up to the level of a principle state document draft, and introduced to the "people's court", so that the opinion of the population may be taken into consideration during debates in the USSR Supreme Soviet. The program is a strategic document, while the tactics of achieving the goals must be determined by the regional, republic, oblast, kray, city and rayon programs. The governments of the union republics and the ispolkoms of the renewed local Soviets of People's Deputies must take the management of these tactics into their own hands.

And so, let us assume, the program is adopted. How can we make it effective? How can we achieve a real breakthrough? We often have occasion to hear—increase the allocations sharply, say, to 25 billion rubles a year, and we may consider the matter resolved. Today we have

exceeded the limits of 11 billion rubles a year. However, the experience of the USA, for example, shows that money even in the cherished convertible currency and in huge amounts is far from everything. Often in the course of business meetings American specialists have warned in a friendly manner: We should not strive toward allocation of gigantic sums. Rather, we should deal more thoroughly with the ecological aspects of development of the industrial, communal and agricultural complexes. Expenditures may be significantly reduced if, for example, at the enterprise level we engage not only in the elimination of pollution at the final stage, when the mixture of substances is already difficult to purify and render harmless, but rather if we proceed along the entire chain—from the raw material to the end product, even to products which have become outdated, if we implement all measures to process waste or, in general, if we opt for a principally different, waste-free, type of production.

The resolution takes into consideration the sad fact that there are two regions in our country—Chernobyl and the Aral region, which we can assuredly call ecological disaster zones, although there is as yet no such legal definition of such territories, while [the definition] proposed by the draft of the USSR Law on Environmental Protection is incomplete.

A governmental commission under the chairmanship of USSR Council of Ministers Deputy Chairman V. Doguzhiyev has been formed to develop measures on restoring the ecological balance in the Aral Sea region and to control their implementation.

In essence, for the first time a special organ has been created for managing the unique process of restoring the disrupted ecological balance, an organ which has no analogs either in this country or abroad. It must find as quickly as possible the means of preventing one of the greatest ecological catastrophes on the planet—the disappearance of the Aral Sea. An analysis of the fulfillment of decisions on this region which were previously adopted showed that far from all the managers of mid-level and highest rank fully realize the consequences which this crisis entails. In Central Asia, many believe that the drying up of the Aral Sea will not affect them. This is a deep misconception. A common misfortune has come (or more precisely, we ourselves have created it), and the water for this sea must be found. Otherwise, great expanses where life goes on fervently today will turn into a barren desert.

The 4 years which have passed since the tragic days of April 1986, when a powerful explosion destroyed the roof of the Chernobyl reactor, showed that the consequences of the accident continue to affect the population of various regions of the RSFSR, the Ukraine and Belorussia. Based on the accumulated experience, a project for a unified union program is being created, which will make it possible to most prudently and correctly utilize all the available means. Specific measures will be announced at the spring session of the USSR Supreme Soviet.

At the same time, this year we will conduct an ecological expert investigation of the projects of atomic and thermal power stations and transport installations currently under construction, including military ones. The task of this expert investigation is to identify and eliminate any, even the slightest, "crack", through which the terrible nuclear genie may break free. At operating AES [atomic power stations], a set of measures is already being implemented to increase the safety of the reactors. We must formulate the state energy program in an entirely different manner, placing energy conservation at the cornerstone of the problem.

However, discontinuing the manufacture of certain types of products may lead to unexpected social upheavals. An acute discussion continues to this day regarding the production of protein vitamin concentrates (BVK) from petroleum paraffins. Meetings have been held in cities where the manufacturing plants are located, as for example in Kirishi. Public influence has born fruit—at all 8 of the plants, the emissions into the atmosphere have been reduced to a minimum with which the sanitary services cannot find fault. However, there are demands to reject BVK's in livestock raising altogether. Yet the closure of the plants will lead not only to economic losses. We must think also about the fate of the 15,000 workers of these enterprises, for whom we will have to find jobs. Therefore, the decision was made to conduct an additional state ecological expert investigation of BVK production prior to August 1990, and to prepare proposals concerning the development of ecologically clean types of production based on traditional types of raw materials and re-profiling the plants on the basis of these new types.

This year, the first State Program on Forest Restoration in the history of our country will be developed. Much will depend on its realization—specifically, what kind of land our grandchildren and great-grandchildren will inherit.

Those peoples whose traditional lifestyle has for many generations been associated with the forest value this resource most of all. The RSFSR Council of Ministers (and on the republic's territory is where such peoples live primarily—the Orochi, Udegey, Evenki, and Nanay) has received a recommendation to establish the boundaries of forest plantings this year, so that thoughtless management intervention does not lead to new conflicts.

Next will be a series of drafts of USSR Laws on environmental protection (already submitted to the USSR Council of Ministers), on the protection and rational application of the plant world, on specially protected natural territories, and on the application of atomic energy and nuclear safety, as well as statutes on resorts. There is also a proposal to create a draft law on utilization of waste.

In the first half of this year, proposals will be prepared on increasing responsibility for violation of environmental protection legislation, as well as for the intentional

concealment and distortion of information on accidents having ecological consequences.

Work is planned on creating a new economic mechanism of nature utilization, and in almost 50 regions an experiment has begun on working out a method of extracting payment for environmental emissions. PRAVITEL-STVENNYY VESTNIK has already reported briefly on this (No 8, 1990).

In this same year, if the union Goskompriroda, Goskompriechat, Gosnab, Mosgorispolkom and other departments exhibit proper activity, the readers will for the first time be able to hold in their hands a weekly ecological report. I believe there is no need to explain the role and significance of this.

Higher courses in ecology will be created to prepare highly trained specialists. In all probability, these will operate in the capital and have branches in other regions of the country.

The Soviet Union is actively participating in international cooperation on environmental protection. Recently, agreements have been signed with Australia and Switzerland, there are plans to join the International Convention for the Control of Transport of Toxic Wastes, and measures are being prepared within the framework of the 10th anniversary of combatting natural disasters announced by the U.N. The authority of our state largely depends on order in our own house, and on a precise fulfillment of all the points of these measures.

Lemeshev Details Personal Environmental Concerns, Plan of Action

90US0657A Moscow LITERATURNAYA ROSSIYA
in Russian No 7, 16 Feb 90 pp 4-5

[Interview With M. Ya. Lemeshev by Yu. Yushkin: "Ward Off a Deadly Threat"]

[Text]Candidate for RSFSR people's deputy Mikhail Lemeshev, a doctor of economic sciences and a UN expert on the environment; and Yuriy Yushkin, section editor of LITERATURNAYA ROSSIYA, talk about how to assure a future for our children and grandchildren.

[Yu. Yushkin] Mikhail Yakovlevich! Perestroyka in the public life of our country has been going on for 5 years. This is a considerable length of time, but the results are pathetic. People's welfare is deteriorating. What, in your opinion, is hindering the realization of the goals?

The departmental-bureaucratic management of social development in the USSR, the neglect of the vital interests of the people, their alienation from the means of production, from natural, material and financial results, from the results of their labor and from decision making have lead the country to an economic, social and ecological crisis. The thoughtless and ruinous growth in the scales of production based upon old technology, industry's working for its own needs and not those of the

consumer and the cost approach to the economy have caused the practically universal pollution of the environment and destruction of nature, a general shortage of consumer goods, increases in the rate of illness and death, and reductions in welfare. All these faults of the state, which have accumulated during 70 years of the construction of "barracks socialism", have not only not been eliminated but have deepened during the years of *perestroyka*. A deadly ecological danger has arisen on the base of economic, social and national disorders. It is my deep conviction that there should be talk about a system of fundamental measures for the survival of the present generation and the future of our children and grandchildren. It is necessary that each and every person recognize that the prevention of the impending ecological catastrophe is the first and decisive condition for the survival of our society.

[Yu. Yushkin] What do you think are the radical measures that must be taken to prevent the impending calamity?

[M. Lemeshev] The protection of people's health should be the first specific step towards survival. The country's economic and scientific-technical potential should be used to solve this key problem. At present this potential is not used in the interest of people, but against it. As a result, the life and health of society are being catastrophically destroyed. Here is a vivid illustration. In the United States the average life expectancy is 75 years, in France it is 76, in Sweden—77, in Japan—78, but in the USSR it is only 69 years. In some regions of our country, in particular in central Russia and the north it is less than 50 years. While in the past 10-15 years life expectancy has been increasing in all the developed countries, in our country it has not only failed to increase, it has declined. As a result, with regard to this indicator the USSR is halfway down the list of the world's countries.

The dynamics of infant mortality are especially tragic in our country when viewed against the background of the developed countries. In the United States 10 infants per 1,000 die before their first year, in France—8, in Sweden—6, in Japan—5 and in the USSR—25. Infant mortality is especially high in cities and settlements with high levels of environmental pollution, above all in the Russian Federation. Here the demographic situation has become critical. In order to convince yourself of this it is sufficient to look closely at the following, chilling data:

Birth Rates, Death Rates and Natural Growth (per 1,000)

	Number of Births	Number of Deaths	Natural growth
USSR	19.8	9.9	9.9
RSFSR	17.1	10.5	6.6
Central Region	14.3	11.9	2.4
Kalinin Oblast	14.1	14.2	-0.1
Tula Oblast	12.8	12.9	-0.1
Pskov Oblast	14.5	14.7	-0.2

As you can see, in central Russia, not only is simple reproduction failing to occur, but, strictly speaking, the Russian nation is dying out. This tragic situation is explained by a complex of reasons ensuing from the general policy of russophobia cultivated in the USSR for several decades and not yet overcome.

[Yu. Yushkin] What, in your opinion, can explain such a tragic situation in the Russian Federation?

[M. Lemeshev] I am convinced that the main reason is the economic and social robbery of Russia. This robbery is conducted by all-union management organs for the benefit of the developed capitalist countries and of union republics, above all the Baltic and Central Asian ones, through the unequal exchange of products of labor. Thus, in world prices imports into the RSFSR from other countries and other union republics total 99 billion rubles, while exports total 140 billion rubles. Thus, every year 41-42 billion rubles are extracted from the budget of Russia. This is the reason for Russia's worsening social and economic problems.

The second reason for the dying out of the Russian people is undoubtedly the destruction of nature and a way of life that has been historically linked to it. A little less than two decades have gone by since the approval of the decree by the USSR Supreme Soviet, the USSR Council of Ministers and the Central Committee of the Communist Party: "On Strengthening the Protection of Nature and Improving the Use of Natural Resources." That was in 1972. Similar decrees on the protection of nature were approved in 1979, 1985 and 1988. However, the ecological situation in the country continues to deteriorate catastrophically. While 20 years ago there were isolated instances of dangerous pollution and destruction of nature, they were primarily of a local character. Today these phenomena have acquired a massive country-wide character. There are widespread zones of ecological calamity, where not only nature is dying, but there is a threat to the health and lives of millions of people. These areas include extensive regions of central Russia, the Lower Volga, the basins of the Caspian Sea, the Aral Sea and the Sea of Azov, Lake Baykal, Lake Ladoga, the southern Urals, Chukotka, the lowlands along the middle stretches of the Ob river, the Yamal Peninsula, the southern Ukraine, regions affected by the Chernobyl accident, resorts in the northern Caucasus, Crimea, the Gulf of Riga and dozens of large and medium sized cities in the country.

There are increasing rates of land destruction, cutting of forests, the pollution of surface and ground waters and the air. All these are causing large economic and social losses. According to experts' estimates, the economic losses from the destruction of nature and public health are 45-50 billion rubles annually. At the same time the state and enterprises fruitlessly spend 10-11 billion rubles to protect nature.

[Yu. Yushkin] It is really possible to improve the environment and save nature from destruction and society from degradation?

[M. Lemeshev] This is a very difficult question. There is a widespread opinion that these environmental protection expenditures are insufficient, and that if they were increased it would be possible to improve the ecological situation in the country. This judgement is deeply mistaken. Under conditions of extensive growth in production based upon resource intensive, nature destroying and polluting technologies, the task of protecting the environment is insolvable in principle, no matter how much is spent upon environmental protection measures. Moreover, without changes in the structure of public production, without its intensification, the stabilization of growth and later, reductions in the production of raw materials and intermediate products (means of production used to produce means of production), without the mastery of resource conserving, ecologically clean technology any growth in labor outlays to protect nature will be nothing other than growth in economic losses to the national economy and public welfare. This is because the creation of all sorts of treatment installations, even the most modern ones, is a struggle with the effects, and not the causes of the destruction of nature and the pollution of the environment. Activities in the protection of nature will lag behind the dynamic activities of nature destroying production, and, consequently, there will be no hope for protecting nature and improving the environment. This is a case where the saying of the ancients can be applied: "The fleet-footed Achilles will never catch the limping tortoise."

[Yu. Yushkin] What do you see as the way out of this critical situation? What should the USSR Supreme Soviet do first?

[M. Lemeshev] There is only one way out—changing the present nature destroying structure of the USSR national economy to a nature conserving one. Specifically, there should be talk about two urgent tasks.

First—Reduce the production and consumption of natural resources, above all, iron ore, oil, gas, timber, fresh water, the area of land being worked, the number of livestock and the gross harvests of several crops (cotton, potatoes, poultry meat, forage crops and others), a large part of which are lost rather than used.

Second—Direct the limited financial and material resources of the state and enterprises away from expanding the scale of production and from economically senseless and ecologically dangerous work such as the construction of nuclear power plants, gigantic reservoirs and canals. Rather, direct them towards the development and mastery of resource conserving, low waste technologies and waste free, ecologically clean industries.

[Yu. Yushkin] Given the specific conditions of our state, is it possible to implement such an ecological and economic strategy for resource use?

[M. Lemeshev] World experience in economic development, especially in such highly developed countries as the United States, the FRG, the Scandinavian countries and Japan, convincingly shows the great efficiency of just this strategy. The aggregate intersectoral calculations I have made show that it should be immediately implemented in the USSR. For example, in the past 15-20 years in the United States the production of oil, gas and steel has declined by one-fourth, that of iron ore, tractors and metal cutting machine tools by half. This decline has not reduced the country's potential. During 1971-1975 the annual growth rate of national income in the United States was 2.8 percent, while during 1986-1988 the annual growth rate increased to 3.3 percent. And, very importantly, this growth was accompanied by marked improvements in the environment.

[Yu. Yushkin] What is the situation in our country?

[M. Lemeshev] It is the direct opposite. With the government's blessings, our ministries and agencies continue the thoughtless and destructive increase in the production of raw materials. The Soviet Union, with 5.7 percent of the world's population, now produces 16 percent of the world's electrical energy, 22 percent of its steel, 27 percent of its petroleum and 42 percent of its natural gas. The lion's share of this production is within the borders of Russia. The RSFSR now accounts for 95 percent of the Soviet Union's oil production, 80 percent of its gas and 63 percent of its electrical energy. In spite of this, kolkhozes and sovkhozes in the republic cannot harvest and haul their crops to the elevators on time because there is not enough fuel.

Tens of millions of families in Russia live without gas. There is not enough electricity for fields and farms. In 103 cities with a total population of about 50 million pollution is higher than the maximum permissible concentrations by factors of 10 and more. There are growing volumes of toxic industrial wastes, a large share of which are hauled to solid waste dumps. Two-thirds of water sources do not meet standards, and there is dangerous pollution of groundwater. There is no high quality treatment of drinking water in 600 cities. Only a small share of output is produced by low waste technologies. Millions of hectares of fertile land are taken out of agricultural use because of mining, erosion, flooding, salination and desertification. Some food products are dangerous because they are saturated with pesticides, nitrates, hormones and radionuclides. The illness rate is increasing.

[Yu. Yushkin] Mikhail Yakovlevich! At present there are bitter disputes about the role of nuclear energy in our society. You are the president of the Soviet Anti-Nuclear Society. What does the "peaceful atom" have to offer us?"

[M. Lemeshev] The development of nuclear energy is the road to ruin. The public, scientists and governments of foreign countries have fully recognized this, and it has been reflected in the sharp reduction or complete halt in the construction of nuclear power plants. In the past 15 years in the United States 108 nuclear power plants have

been closed. Since 1976 there has not been a single order for a nuclear power plant in that country. In Sweden in 1980 there was a general referendum in favor of halting the construction of nuclear power plants. The last of the 12 plants now operating are to be shut down by the year 2010. The only nuclear power plant in Austria, which was completed in 1985, has not yet started operating. The governments of Italy, Great Britain, Mexico and Brazil have decided to stop the construction of nuclear power plants. In the 1960's, on the average, every year work began on about 40 power reactors; in the 1970's it was 24; in the beginning of the 1980's, 15 reactors; and in 1988 there were only 2 orders for new nuclear power plants: one each in France and Japan.

The Chernobyl tragedy, costing many human lives, the health of thousands and causing innumerable damage to the country's economy, is the apogee of danger in nuclear power engineering. Initially this damage was officially estimated at 8 billion rubles. However, this estimate was based upon a radiation damage zone with a radius of only 30 kilometers. In reality, the damage covered large areas in Kiev, Zhitomir, Gomel and Bryansk oblasts, where millions of people live. Nobody can accurately predict their future health and the health of their children. In the near future it will be necessary to resettle tens of thousands of citizens living in contaminated regions. Hundreds of thousands of hectares of agricultural and forest land and watershed are out of commission practically forever.

In my estimate, the economic damage inflicted by the Chernobyl accident is at least 40 billion rubles. According to American specialists, a large catastrophe at a nuclear power plant located in a densely populated region could kill 140,000 people and do about 150 billion dollars in damage. However, this gloomy prospect for the development of nuclear energy does not disturb our pro-nuke people.

Nuclear power plants are now being built at 30 sites in the USSR. These include nuclear heat supply stations located in direct proximity to very large cities; for example, the Gorkiy AST [Nuclear heat supply plant], located 5 kilometers from this city of one and a half million. The high authorities of the future law-governed state decided to sanctify the road our society took to the nuclear netherworld.

Obviously, the draft of the law on the use of nuclear energy was prepared for these purposes. This draft was compiled from a narrowly departmental, technocratic perspective and is a vivid expression of the cost driven approach which still reigns in our economy. The draft completely ignores the opinion of broad circles of Soviet society and world wide tendencies in the development, or more accurately, the curtailment of nuclear power. A vivid example of the lack of objectivity in the situation is shown by the first lines of the draft, which assert that nuclear power is one of the most efficient energy sources for society.

In reality, the cost of electrical energy generated at nuclear power plants is 2-3 times higher than that of thermal power plants and 4-5 times higher than that of hydroelectric power plants. Each nuclear power plant costs from 2 to 6 billion rubles and takes 12-13 years to build, consuming huge amounts of energy in the process. Its service life will not exceed 30 years.

[Yu. Yushkin] Is there an alternative to more nuclear power? After all, the demand for energy is increasing. How can it be met?

[M. Lemeshev] First of all it should be understood that this demand is false. Its increase is due to the increase in unnecessary and extremely energy intensive industry, for example, the construction of gigantic canals destroying our land, plants for poisonous chemicals and artificial feed protein and vitamin concentrates, the extraction and processing of uranium ore, the construction and operation of nuclear power plants and the production of unneeded equipment, such as heavy tractors. A halt to such senseless work will cut energy demand in half.

As far as alternatives are concerned, take a look at the nearest one. In 1988 nuclear power plants generated 216 billion kilowatt hours of electrical energy. Is this too much or not enough? This is equivalent to 65 million tons of standard fuel, or a little more than 2 percent of the USSR fuel and energy balance.

For comparison, it can be pointed out that in 1988 natural gas exports exceeded 88 billion cubic meters, equal to 106 million tons of standard fuel. In the same year the Soviet Union exported 144 billion tons of crude oil and 61 million tons of light petroleum products, equal to 300 million tons of standard fuel. So, sales of oil and natural gas, the most valuable, ecologically clean and safe energy resources, were more than 6 times greater than the energy output of nuclear power plants. It should be added that these nonrenewable resources were sold literally at throwaway prices, as demand for them has declined sharply due to the transition of Western countries to energy saving technologies.

Obviously, even a partial reduction in the squandering of our unique energy resources could more than compensate for energy from nuclear power plants obtained at the cost of deadly danger to millions of our fellow citizens. There are other alternative sources of energy—the construction of small hydroelectric plants without dams, solar and wind energy facilities, installations working on biomass and wastes from livestock farms, geothermal sources, tidal energy. All these directions in power engineering are rapidly gaining priority in the developed countries, while here they are consciously delayed by the advocates of more nuclear power plants.

[Yu. Yushkin] Mikhail Yakovlevich, you are a candidate for RSFSR people's deputy. Can you say something about your program?

[M. Lemeshev] Russia is threatened with deadly danger. The economic, social and ecological crisis is growing

rapidly. The country's government does not have a realistic strategy for improving the economy, saving nature and improving the welfare of working people. Some politicians are giving people the false idea that the country's economy can be improved only by including it in the world economy. However, Russia is to large for the West to swallow whole. Therefore, under the ridiculous pretext of cost accounting, they are attempting to dismember the country into isolated republics and the RSFSR into cities, regions, open rayons and free zones. These fragmented parts of a single Russia are promised a sweet life with the help of foreign capital.

This is a fraud! The replacement of our departmental monopolies and criminal wheeler-dealers with foreign masters will not feed the people but will turn us into slaves! It is naive to think that capitalist bigwigs such as Hammer are really concerned about the welfare of the Soviet people. They are attracted by our natural resources and cheap labor power as a source of super-profits.

The renaissance of Russia as a great power requires the following.

In politics:

Full sovereignty for Soviet Russia as an independent state in the USSR, its political and economic independence from union organs of management;

Full power to the soviets of people's deputies as the political basis for the republic. All social and economic structures to operate according to laws approved by the soviets;

Sovereignty and economic independence for autonomous republics, oblasts, national okrugs in the Russian Federation. The development of national languages, native cultures and their traditional way of life for all peoples in Russia;

Participation of the Russian state in the reconstruction of cathedrals, monasteries and religious relics, and their transfer to churches;

Independent Russian mass media: Television, radio, newspapers, magazines and publishing houses.

In economics:

Transfer all natural resources to the ownership of the soviets of Russia: land, surface and ground water, minerals, the animal and plant kingdoms; stop the criminal sales of natural wealth abroad;

The inter-republic exchange of products based upon world market prices;

Grant land, free of charge, to all citizens of Russia who want to work it;

Halt the budget financing of work and projects destroying Russia's nature and economy;

Free all citizens from taxes on wages. Taxes should be only on additional income, in accordance with the declaration of income.

In ecology:

Develop a republic program for restoring fertile land, saving small and large rivers and lakes, halting the destructive cutting of forests and improving the environment in cities;

Prohibit the construction of nuclear power plants, destructive canals, dams and reservoirs and harmful chemical industries;

Halt the production and agricultural use of pesticides and other poisonous chemicals;

Supply pregnant women, nursing mothers and children with ecologically pure products;

The open public sale of low cost equipment for monitoring radiation and measuring the quality of food, water and air.

In national-territorial electoral district No 11:

Halt the construction of the Northern TETs, threatening the ecology of Moscow and the area north of Moscow;

Prevent the construction of a facility for the mass (165,000 tons annually) incineration and burial of highly toxic wastes near Zagorsk;

Close the Radon enterprise and other ecologically dangerous industries;

Forbid the cutting of forests in the forest park shelter belt north of Moscow;

Set up local committees for ecological self-management in all cities and settlements in the district.

[Yu. Yushkin] A final question. Mikhail Yakovlevich, now, as in the prerevolutionary years, is a time of meetings. For example, on Sunday, 18 February, at noon in Ostankin there will be an approved meeting of the United Workers Front and the public-patriotic movement of Russia. What is your opinion about this?

[M. Lemeshev] I think that such meetings are very important right now. They help consolidate the true patriots of the Fatherland and resist the capture of power by extremist forces, who disguise themselves as leftists, but are really rightist reactionaries. It seems to me that everyone to whom the fate of Russia is dear should participate in the meeting at the television tower.

The participants donated honoraria for this discussion to the Fund for the Restoration of the Cathedral of Christ the Savior.

Environmental Pressures Cited in Pharmaceutical Shortages

90US0714B Moscow NEDELYA in Russian No 10,
5-11 Mar 90 p 7

[Article by Vladislav Starchevskiy: "The Ecological Pill"]

[Text] You will hardly find anyone who likes to hurt. This pursuit is not very pleasant. And sometimes it is very difficult for us. More accurately, it is difficult to treat. Well, sometimes there is simply nothing which can cope with a serious illness, or even a trivial headache: the shortage virus is spreading throughout our drugstores, like a flu virus at the height of an epidemic. By far, not every prescription gets filled the first time. The lines for simple mustard plasters or a potion are threatening to reach the scale of the lines for cooked meats...

The situation, there is no denying, is an emergency. Therefore, there is nothing surprising in the fact that, at the end of January, it was examined by the USSR Council of Ministers' State Commission for Emergency Situations. As is well known, this commission has jurisdiction over acute ecological matters as well. And, in the opinion of the USSR Ministry of the Medical Industry, the situation was aggravated precisely by the fact that, locally, in the course of the struggle for environmental cleanliness, they actively began to close enterprises and shops which produce raw materials for the pharmaceutical industry.

As was mentioned at the meeting, the closure since 1 January, 1990, of 13 such enterprises and production lines is depriving the country's health care system of many of the most important medicinal remedies. At the same time, it is true, it was noted that the majority of these enterprises and shops have inflicted serious damage for a long time on the environment (and, consequently, on the health of the people, which their products are supposed to restore). The commission decided to adopt urgent measures for setting into motion once again the halted capacities while simultaneously implementing the necessary environmental protection measures.

In the USSR Goskomprirody [State Committee for Environmental Protection], I was shown letters sent after the commission's meeting by the first deputy minister of the medical industry, L.P. Telegin, to a number of departments, including the State Committee for Environmental Protection: "I ask that you, without delay... determine the additional measures and time frames which will ensure the immediate placement into operation..." and it continues on with a list of enterprises.

But, as it turned out, by far not all of those have been closed by the local authorities out of ecological considerations. Others are operating quite well, for example, the Khimprom [chemical industry] Production Association in the city of Krasnoperekopsk. Not put out of operation were the capacities of the Baku Iodine Plant, the Neftechala Iodo-Bromine Plant and the Sumgait

Orgsintez [organic synthesis] Association, about which an official report was presented in USSR Goskomprirody by the first deputy chairman of the Azerbaijan SSR Council of Ministers. And then there is the Kemerovo Azot [nitrogen] Association, which was supposed to be put out of operation by the USSR Council of Ministers' resolution on improving the ecological situation in the regions, which was adopted a few years ago. But it is operating even now.

The most serious conflict is associated, perhaps, with the closing of the chlorosulfonic acid production line at the Kirovgrad Copper Smelting Combine (Sverdlovsk Oblast). More than 20,000 tons of this acid were produced here annually—a third of the union-wide production. Yet it is necessary for the production of analgin, amidopyrine, norsulfazole, sulfalene and many other mass-produced drugs. Losses of such volumes, there is no denying, are keenly felt. Why, then, did the oblast leadership and the environmental protection services stop the production line? "Local egoism," they believe in the Ministry of the Medical Industry. And the chief of the ministry's Main Production Administration, M.I. Grigoryev, declared on the pages of PRAVITELSTVENNYY VESTNIK: "I am not convinced that this decision has removed the ecological stress, since chlorosulfonic acid amounts to only 0.25 percent of the total in the harmful discharges from the copper smelting combine."

We will not argue about the humaneness of the percentage approach to such things. Especially since it is not a matter of this quarter of a percent: the stopping of acid production in Kirovgrad is the result of a long story.

The shop we are talking about was built at the combine in 1941. Its technology, structures and equipment have become hopelessly outdated, and this is why the sensible decision was adopted at the union level: in 1988, the production of the referenced acid here was to cease. And by this time, the former USSR Ministry of Mineral Fertilizer Production was supposed to expand its production at its own chemical hydrology plant in the city of Uvarovo. Naturally, based on modern technology. And just as naturally, alas, nothing was done. The retired shop in Kirovgrad continued to operate.

The situation at the enterprise became ever more tense. The oblast authorities decided all the same to close the acid production line as of July, 1989. "It is not necessary," declared the then active USSR Ministry of Non-ferrous Metallurgy, the combine's owner. "We are carrying out renovation." And, in fact, capital repairs were made. After which, because of gross manufacturing process violations, in July of last year, there occurred here an enormous discharge of poisonous substances into the atmosphere. Acid burned more than 500 vegetable and garden plots in the district. There followed a routine decision by the oblast environmental protection committee to stop the harmful production. Then—routine repairs. In August, there was a routine accident which discharged acid into the atmosphere. It

became necessary to evacuate the workers from adjacent shops and two people were injured. And even the metallurgists flatly demanded that they be saved from such a nearby "bomb."

Further on—it was like a detective novel. The oblast committee for environmental protection put a seal on the dangerous shop and the plant management broke it. It was sealed again—it was broken again. The oblkomprirody turned to the oblast procuracy. USSR Goskomprirody turned to the union procuracy. The actions of the local bodies of power were acknowledged as legal. As of 1 January, 1990, the production of acid was stopped.

This is how the Kirovgrad story was described to me in USSR Goskomprirody. Well, but what about the Ministry of the Medical Industry? Of course, they knew about the accidents there. But, with the active support of V.K. Gusev, a deputy chairman of the USSR Council of Ministers, they insisted on continuing production. Not taken into consideration was the actual situation, which was in danger of becoming an emergency, but rather, the written assertions of S.V. Kolpakov, the country's minister of metallurgy, that a "program of measures" had been worked out. It, supposedly, would make it possible, even in 1989, to improve the working conditions of the workers in the chlorosulfonic acid division, to restore the equipment and to reduce the discharges of harmful substances into the atmosphere to the standard level. The minister sent such a letter to the USSR Council of Ministers in September of last year. But already in this year, when the Ministry of the Medical Industry decided all the same to clarify the situation, it turned out that neither money nor metal nor equipment were given to the combine by the USSR Ministry of Metallurgy. So much for the "program of measures." And, finally, the latest news from Kirovgrad. At the end of February, on the very same day when, at a meeting in V.K. Gusev's office, as usual, disputes were going on around the Ural production, the roof collapsed in the ill-fated shop. Fortunately, there was already no one there.

So who, then, one may ask, is responsible for the fact that the medical industry was left without the needed raw materials? Those who decided not to risk people's lives any more? Or, likewise, those who did not carry out at the proper time the sensible decisions, those who gave promises backed up by nothing or those who believed these promises?

"In any case, we have found ourselves in a complicated situation," said V.A. Kirsh, chief of the USSR Ministry of the Medical Industry's Material and Technical Resources Department. "Compensating for the shortage of chlorosulfonic acid by purchasing it abroad is very difficult. And there it costs twice as much as the domestic version. For this year, we managed to conclude a contract with a Swedish firm and the Poles promised to deliver the acid. But, first, this will not make up for all the losses and, second, what is to be done for next year? In my opinion, we will not be able to expand production at the enterprise in Uvarovo sooner than in two years

time... Huge problems have been created for us also by the closure in Yerevan of the USSR Ministry of the Petroleum Refining and Petrochemical Industry's Nairit [chloroprene rubber] Association, where, in particular, they produced carboxylic acids. Without them, it is impossible to manufacture analgesic drugs, vitamins and other preparations. It is true, according to the latest reports from Yerevan, they have decided there to resume the "medicinal" part of the production. We will hope..."

The struggle surrounding the closed production lines has shed light on one of the main ills of our pharmacology—the monopoly of the raw materials suppliers. In the words of V.A. Kirsh, up to 70-80 percent of the materials received by the sector are in the hands of monopolistic producers. But, with the transition to direct wholesale ties, the matter has been aggravated to the limit. Thus, while a state order is given for the production of medicines, the raw materials for them are not there.

USSR Gosplan and USSR Gossnab are occupying a strange, to put it mildly, position. The former persistently continues to plan the tasks of the medical industry in rubles, which enables the industry splendidly to deal with them and even to overfulfill—against the background of the increasing medicine shortage and the poor satisfaction of the Ministry of Health's demands for many preparations.

And with regards to Gossnab, here are two examples of its activities.

The readers, of course, will recall how much of an uproar was caused by the shutdown of the Sloka TsBK [Paper and Pulp Combine] in Yurmala. It also struck a blow to the Ministry of the Medical Industry: Sloka supplied the bundling paper from which they make the wrapping for medicines. But here the passions have abated, the TsBK has partially resumed operation and is promising to begin supplying the bundling paper. Although, instead of the former 12,500 tons, it will produce around 9,500 tons. How, then, did the country's Gossnab deal with these volumes? It allocated to the medical industry 1,000 tons, less than two-sevenths of what was needed. While the lion's share, 6,000 tons, was given... to the tobacco industry!

There is nothing to be said, it is necessary to watch over the interests of the smokers, for we have so many of them. But really, do the interests of sick people count for less? Perhaps the Ministry of Health will remind Gossnab that, not only is smoking dangerous to health, but so is the lack of medicines as well?

Again, Gossnab decided to economize in the medical industry in the distribution of orders for the delivery of soda ash, without which it is impossible to make the glass for bottles and ampoules: it included the sector's needs among the "non-priorities." I saw the desperate letter written by the directors of the various glass works to P.I. Mostovoy, the chairman of USSR Gossnab. And I am talking about, in all, a missing 5,000 tons of soda: a drop

in the bucket of the national economy, but, for these plants—a substantial figure...

It is possible to go on and on, listing the ills of our pharmacology. There are also the miserly assets allotted to the sector for many years. And the backwardness of the production base, which has not been renovated for about 10 years. And, naturally, there are the problems with the raw materials. That is the way it is. However, references to the difficulty have still not put a single sick person back on his feet. We are unable to get by without a widespread state program for the "resuscitation" of the medical industry.

But why, then, of all the sector's problems, have the collisions between the ecological and the health services come to the forefront? And is it just accidental that, shortly after the revelation of these collisions, the USSR Council of Ministers included in the decree "On Urgent Measures for Normalization of the Consumer Market, Money Circulation and On Strengthening State Control Over Prices" a paragraph about the fact that the suspension or stopping of the activities of enterprises of union subordination is permissible in exceptional instances and only with the permission of the national government?

This paragraph, in fact, is removing from the environmental protection service the only effective means for influencing the heads of enterprises and departments. Indeed, more and more often, only the actual threat of closing has compelled them at least to do something to protect the environment and the people. The curtailed rights of Goskomprirody (which, by the way, is itself flatly against hasty closings) have not been currently reinforced either by adequately effective environmental protection legislation or by colossal fines for ecological crimes such as are generally accepted throughout the world. What is more, the decision adopted by the government is a direct violation straight out of two laws: the USSR Law "On the Protection of the Atmosphere" (Article 10) and the USSR Law "On the Protection and Use of Animals" (Article 34).

Of course, our economic system has turned out to be caught in an ecological vice. It is not possible to get out of it easily, in a year, in 5 years. And each production stoppage is an extreme step which should not be the result of emotions. But is it worthwhile to return to the position "either the economy—or the ecology"? If there are doubts about the objectivity of the local authorities, let independent interdepartmental commissions of experts decide the fate of the disputed enterprises.

Honestly, I, just like any one of us, want us to be delivered from the disgraceful medicine shortage and for the Ministry of the Medical Industry to have those resources and in those quantities which it needs. But the shortage of medicines tells not only about the level of the medical industry, but also about the level of the people's health. And both of them should not be in emergency situations.

Public Ecological Coordinating Council Formed in Moscow

90US0709B Moscow MOSKOVSKAYA PRAVDA
in Russian 8 Feb 90 p 1

[Unattributed report: "New Public Organization Appears in the Capital"]

[Text] The primary task of the Ecological Coordinating Council—"EKOS"—is the application of the scientific and creative potential of scientists, specialists, and cultural leaders to increase the level of ecological culture of Moscow residents, and the formulation of their active civil position. The Council will conduct propaganda on ecological knowledge, provide practical assistance to enterprises and institutions, and aid in establishing business contacts between Soviet and foreign ecology organizations.

Local Authorities Oppose Moscow's Amur River Dam Project

90US0707A Moscow RABOCHAYA TRIBUNA
in Russian 15 Mar 90 p 2

[Article by N. Belyy, RABOCHAYA TRIBUNA correspondent: "The Amur's Tears"]

[Text] Why is the fate of our great Asian river being decided quietly, without a broad public investigation?

They have been unable to turn the northern rivers. It doesn't matter. There is still the possibility of drowning billions in the east. The father-Amur has found itself the target of the next project of the century.

Let me explain from the beginning. The idea of blocking the Amur with a high dam was not born today. This joint Sino-Soviet project was proposed back in the mid-50's. It is still unclear what specific benefits it promised. Yet according to the notions of its authors, the gigantic dam project would certainly strengthen the fraternal ties between the two great peoples. It was only because of the circumstances known to all that the project was put off until more favorable times. Now they have come, and evidently this has provided a reason to shake the 30-year old dust off of the old schemes.

Hailung Tsian—the "Black Dragon". That is what they call the Amur in China. The "taming of the Black Dragon"—that is what the project was called by mutual agreement. At that time, it was customary to tame nature, and not to live in peace and harmony with it. Yet in 1957 the discussion centered around a single dam. Today, when we have supposedly begun to think seriously about ecology, a cascade of 7 hydroelectric stations is being planned. In other words, the appetites have increased to a geological project of which there is no equal in world practice. Then again, few people know anything about it. The scope of the forthcoming construction is clearly not commensurate with the level of publicity about it. Perhaps this is because it is the former Minvodkhoz which will bring the planned project to life?

Its tactics are well-known: To quietly excavate a foundation pit, and then try to convince everyone that it would be a shame to lose the millions which have already been spent.

Ministry people have been visiting China for several years now and happily working in joint Soviet-Chinese commissions. A meeting of one of the latter was held last year under the chairmanship of the not unknown P. Polad-zade. An agreement has already been reached on the first priority objects—the Amazar hydroelectrical station and the Dzhalin Din counterregulator. After these, the head institute "Soyuzgiprovodkhoz" proposes to start work on the hydroelectrical stations on the Central Amur—Tolbuzinskiy, Kuznetsovskiy, and Novovoskresenovskiy...

The Amur was once a rich river. The well-known Russian researcher of the last century, Mikhail Ivanovich Venyukov, for example, described how Cossack settlers fished for food there. "They set out", he testified, "fishing tackle made of simple poles with hooks tied to them, on which they had no bait. Nevertheless, they caught fish. That is how much of it there was!" Today this is just a myth. Enterprises have poisoned and continue to poison the waters, dumping 35,000 tons of harmful substances each year. We must save the river. By some strange logic, it seems there is never enough money for purification structures or for modernization of technology. Yet they find the funds right away for all kinds of hydroelectrical stations.

Today the free Amur is already an ecological disaster zone. If dammed up, it will perish altogether. The fate of the Mother Volga awaits the Father Amur. The expansive seas, the so-called water reservoirs, will flood over the forests and pasturelands. Why, the Khingansk hydroelectrical station alone is capable of causing a catastrophe. Next to the planned site are the lands of the largest state preserve in the Far East, where unique natural ecosystems, the only one's on earth, have been preserved. Here one may still find the Amur lotus and the Japanese crane, which have been entered into the USSR Red Book [endangered species list] and the Red Book of the International Council of Environmental Protection. If a dam were to appear here, it would cover over the migration routes of the miraculously surviving Far Eastern salmon and other commercially valuable fish.

It is quite understandable that the prospect of being left on the banks of a gigantic drainage ditch, devoid of fish and deprived of the advantages of through navigation, does not suit the population of either side. In the course of my newswriting assignments, I often had occasion to visit the province of Heilungkiang which neighbors the Amur region, and I have a first-hand knowledge of the viewpoint of the local residents, as well as that of competent specialists, regarding the future of the Amur.

"The planned cascade means the destruction of the entire Amur basin," states USSR Academy of Sciences

corresponding member V. Moisiyenko, expressing the opinion of Soviet scientists. "We cannot allow this! Alas, neither the specialists from our AmurKNII [Amur Comprehensive Scientific-Research Institute] nor our colleagues from Khabarovsk were invited to participate in preparing the project. Moscow thinks it knows best.

The Amur obispolkom opposes the plan. One of the first official appeals of its new obispolkom chairman, A. Velonogov, was to the USSR Council of Ministers. In it, he expressed regret that the plan developments on the Amur are being conducted without the participation of local Soviets, without apprising the community of the project, and without consideration for the full complement of ecological factors. Prior to completion of the plan development and approval of the scheme for the comprehensive utilization of boundary sections of the Amur and Agrun rivers, the letter stressed, the obispolkom believes that any negotiations with the contiguous side on specific questions of a joint project and construction of hydroelectrical stations would be premature.

For some reason it was the USSR Minenergo [Ministry of Power and Electrification] which responded to the letter. I saw this glib text, compiled according to the well-polished principle of "running with the hare and hunting with the hounds", and I understood that there is absolutely nothing standing in the way of the proposed hydraulic project. The developments have been given the "green light". It is true that the Ministry made a verbal step toward compromise. It promised that in the future the negotiations with the Chinese side on specific questions of construction would be conducted only after coordinating the agreed-upon points with all interested organs, and that the population would be fully apprised of the course of the scheme's realization. Yet the main question, alas, remained without attention. Who really needs the project—the USSR Minvodstroy or the region?

Nevertheless, it would be naive to place all the blame now on the waterway departments. In the situation with the Amur there are enough "commanders"—beginning with the highest institutions. People have often hinted to me about this circumstance, significantly raising their index finger. Once they even showed me the documents. They bore the seals of the USSR and RSFSR Councils of Ministers. I also saw their orders to the USSR Ministry of Power and Electrification, the USSR Ministry of Foreign Economic Relations, the RSFSR Gosplan, and the former RSFSR Ministry of Land Reclamation and Water Resources. I saw the list of jobs performed in recent years on the Upper and Central Amur within the framework of the outlined scheme. In short, the matter has received its blessing and is moving along. Quietly, without too much noise, the ruin of the "Black Dragon" has been prepared. And it is very close now. Whether or not society will be able to save the Amur is unknown.

We admit that the problem is an extraordinary one. It goes beyond the framework of our country. There is an

agreement between the USSR and CPR governments dating back to 1986 regarding the prospects of joint utilization of the water resources of the Amur and Arguka. Yet this does not mean that this agreement should be fulfilled by any means, including controversial ones capable of bringing irreparable harm instead of the promised benefit. We are speaking here about the future of a great number of people inhabiting both sides of the Amur, about a river of world renown, whose success largely determines the ecological-economic status of the Transbaykal and the entire Pacific region.

And one more thing. It is quite probable that the people who are today giving orders to the ministries and making decisions on the project voted for the draft of the CPSU Central Committee Platform. Yet it states: "The party considers it necessary to legislatively secure the order of strictest scientific expert investigation and consideration of public opinion in resolving questions associated with the location of new industries". Good words must be not only pronounced. They must be followed.

Moscow Air Pollution Statistics Broken Down by Rayon

*90US0714A Moscow VECHERNYAYA MOSKVA
in Russian 17 Feb 90 p 2*

[Article from the press service of the Moscow Committee for Environmental Protection: "What Are We Breathing?"]

[Text] On 3 February, VECHERNYAYA MOSKVA published on the first page material under the title "The Capital: The View From Space." It was illustrated with a photograph taken at an altitude of 660 kilometers from a satellite. Moscow was imprinted as a unique "breathing map," where the dark sections designated areas where man has had an active influence on the environment.

The space photograph made it possible to see the ecological situation in the capital as it is, in all the complicated interlacing of the problems, be they slight or simply unsolvable. The publication caused a response from the readers. The specialists from Moskomprirody [the Moscow Committee for Environmental Protection] responded as well. They prepared data which testify eloquently about the situation in Moscow's rayons. Just what is it?

The main thing which disturbs the residents of Moscow, to judge by their letters and phone calls, is the air pollution. The total volume of discharges into the atmosphere of harmful substances, according to Moskomprirody's data, amounts to around 1.2 million tons per year. Which rayons here are "in the lead?" Here is a small table which shows the pollution percentages as part of the overall volume for Moscow.

Lyublinskiy—19.1 percent, Timiryazevskiy—14.6 percent, Kuybyshevskiy—12.0 percent, Gagarinskiy—7.9 percent, Sovetskiy—7.4 percent, Proletarskiy—6.3 percent, Taganskiy—3.8 percent.

The comfort level of the condition of the surrounding environment encompasses 28 residential microrayons with an area of 4,100 hectares. These are the northern part of Khimki—Khovrino, Tushino, Strogino, Krylatskoye, Troparevo, Teply Stan, Yasenevo and some others. Around 700,000 Muscovites live here.

There are more than 8,600 hectares of residential areas in the vast area of uncomfortable living conditions, where millions of Muscovites live. This area occupies the central, eastern, southeastern and northeastern sections of the city. Within the area, on an area of 2,700 hectares, residential districts with a maximum state of environmental discomfort are clearly marked out. They are located within the limits of the Sadovyy Ring Road and within the central planning zone.

Increased atmospheric pollution manifests itself first and foremost in the increase of lung illnesses. Thus, the extent of bronchial asthma, acute bronchitis, conjunctivitis, pharyngitis, tonsillitis, and chronic otitis is 40-60 percent higher in rayons with increased air pollution. Children living in houses along the Sadovyy Ring Road (from Smolenskiy Ploshchad [Smolensk Square] to Ploshchad Vosstaniya [Insurrection Square]) have six times as many incidences of ear, throat and nose infections and three times as many incidences of bronchitis as children living, for example, around Filevskiy Park.

Now, with adequate certainty, it is possible to state that one-fifth of all the illnesses of Moscow's population is associated with the unsatisfactory state of the ecology.

The editorial staff has passed these data on to the Space Monitoring Department of Goskomgidromet [the State Committee for Hydrometeorology] with a request that detailed photographs be made from space of Moscow's rayons, primarily of the most unsatisfactory ones. We will publish these photographs in order, again and again, to attract the attention of all interested parties and, first and foremost, of the residents themselves. We will give space to specialists who want to express their own well-qualified opinions regarding how to improve the ecological situation in the city's rayons.

Ecological Rating of Moscow's Rayons (According to the discharges of harmful substances into the atmosphere)

Relatively Satisfactory Rayons:

1. Babushkinskiy: The portion of pollution of the city by it is 0.8 percent. The source here is the petroleum lubricants refinery, about which there have been many complaints.
2. Voroshilovskiy—2.4 percent. The maximum allowable concentrations (PDK) for nitric oxides and dust are being exceeded.
3. Dzerzhinskii—0.5 percent.
4. Zheleznodorozhnyy—0.2 percent.

5. The city of Zelenograd—0.5 percent.
6. Kiyevskiy—1.8 percent. The PDK's for carbon monoxide and nitric oxides from the operation of enterprises and motor vehicle transportation are being exceeded.
7. Krasnopresnenskiy—1.9 percent. There is an excess of nitric oxides from motor vehicle transportation.
8. Kuntsevskiy—0.8 percent.
9. Leningradskiy—1.1 percent. There is an excess of nitric oxides from motor vehicle transportation.
10. Leninskiy—0.4 percent.
11. Moskvoretskiy—1.5 percent.
12. Oktyabrskiy—0.2 percent. The PDK's for nitric oxides are being exceeded on the primary motor vehicle highways.
13. Pervomayskiy—0.9 percent.
14. Sverdlovskiy—0.6 percent.
15. Solntsevskiy—0.3 percent.
16. Sokolnicheskiy—0.5 percent.
17. Sevastopol'skiy—1.5 percent.
18. Tushinskiy—1.4 percent.
19. Frunzenskiy—0.2 percent.
7. Kuybyshevskiy—12.0 percent. There have been a lot of complaints about the enterprises operating here. The PDK's for nitric oxides, carbon monoxide and hydrocarbons are being exceeded.
8. Lyublinskiy—19.1 percent. One of the most unsatisfactory rayons. The PDK's for nitric oxides, ammonia and dust are being sharply exceeded.
9. Perovskiy—3.2 percent. There are also a lot of complaints from this rayon.
10. Proletarskiy—6.3 percent. The PDK's for carbon monoxide, nitric oxides, hydrocarbons and dust are being exceeded.
11. Sovetskiy—7.4 percent. The PDK's for carbon monoxide and nitric oxides are being exceeded.
12. Taganskiy—3.8 percent. The PDK's for carbon monoxide, nitric oxides and dust are being exceeded.
13. Timiryazevskiy—14.8 percent. Also one of the most unsatisfactory rayons. The PDK's for carbon monoxide, nitric oxides and dust are being sharply exceeded.
14. Cheremushkinskiy—3.9 percent.

During the evaluation of the state of the ecology of one or another of the rayons, the wind rose is also taken into consideration. For example, even with a relatively small amount of discharges, one or another rayon is listed among the unsatisfactory ones because of the harmful substances transported by the wind from adjacent areas.

Unsatisfactory Rayons:

1. Baumanskiy: The portion of pollution of the city by it is 0.3 percent. Nevertheless, the PDK's for carbon monoxide and nitric oxides are being exceeded because of motor vehicle transportation.
2. Volgogradskiy—1.1 percent. The PDK's for carbon monoxide and nitric oxides are being exceeded because of motor vehicle transportation.
3. Gagarinskiy—7.9 percent. The PDK's for nitric oxides and dust are being exceeded.
4. Kalininskiy—0.9 percent. The PDK's for carbon monoxide, nitric oxides and dust from the operation of enterprises and motor vehicle transportation are being exceeded.
5. Kirovskiy—1.6 percent. There have been a lot of complaints about the Stankolit plant [machine tool foundry], the aluminum alloys plant and Chemical Plant No 1. The PDK's for carbon monoxide, nitric oxides and dust are being exceeded.
6. Krasnogvardeyskiy—0.9 percent. There have been a lot of complaints about the oil refinery, the gas coking plant and TETs-22, which are located outside the boundaries of the rayon. The PDK's for ammonia, nitric oxides and other substances are being exceeded.

Peace Committee Urges Closure of Test Site

*LD2604223390 Moscow TASS in English 1833 GMT
26 Apr 90*

[Text] Moscow April 26 TASS—The Soviet Peace Committee has urged the Soviet Union's Government to close down the Semipalatinsk nuclear test site.

In an address to the government, the Committee says that "members of the general public of Semipalatinsk region, concerned over the situation taking shape around the test site where nuclear detonations were carried out for many years, appeal to the committee.

"The government's unfulfilled promise to consider the future of the test site in the first quarter of this year is giving rise to concern and bewilderment among the region's 850,000 residents.

"The efforts being taken by various organisations, including the Peace Committee, and aimed at rendering assistance to the population and at removing the strain are turning out to be clearly inadequate.

"What is required is a comprehensive long-term programme to eliminate the aftermath of operations at the Semipalatinsk test site, including a solution of specific issues connected with improving the health of people

who were exposed to radiation, building medical institutions and fitting them out with up-to-date equipment and medicines.

"No detonations are currently carried out there. But this has not removed the strain. Conducting nuclear tests in a densely populated locality seems inhumane to us," the address says.

"The peace committee is calling on the Soviet Government to respond to applications coming in from all over multi-ethnic Kazakhstan and to take a decision to immediately close down the Semipalatinsk nuclear test site," the address emphasises.

The people's deputies from the Soviet Peace Committee have been given a mandate to support this address with their energetic actions and to put an item concerning the Semipalatinsk nuclear test site on the agenda of a regular session of the USSR Supreme Soviet.

Ministry Halts Nuclear Testing in Kazakhstan

LD0205132690 Belgrade TANJUG in English
1234 GMT 2 May 90

[by Risto Popovski]

[Text] Moscow, 2 May (TANJUG)—The Soviet Defense Ministry recently decided to halt all underground nuclear testing in Northern Kazakhstan's Semipalatinsk region.

The Soviet public sees the suspension as a victory for the movement against nuclear testing in the area - even if only a temporary one. The ministry's decision was primarily motivated by a discovery on the negative effects of underground nuclear tests made by bio-physicists from the city of Alma-Ata.

The ominous and alarming results of research over a period of 15 years were published here recently.

Although the Soviet public has not yet been acquainted with all the details, Professor Inyushin, head of the research team, spoke to TANJUG about its findings in a frank and direct manner.

Water, which makes up the bulk of all cellular matter in the human body, "remembers" disturbances and waves caused by an underground nuclear explosion. Successive tremors compound the deformity. The body gradually loses its natural resistance and responds to subsequent stimuli with increasing sensitivity and growing pain.

Independent medical statistics and research corroborate the findings of the Alma-Ata bio-physicists.

A high percentage of people living in the vicinity of the nuclear testing region—41 percent—suffer from various forms of neurosis. The number of people seeking medical aid doubled after every underground nuclear test.

Perhaps the most alarming issue is the fate of children born and living in the region. Professor Inyushin has encouraging news. He says his team followed its discovery of the cellular deformities by looking for a way to eliminate them. A bio-energetic rehabilitation method was perfected as a way to "erase" the cells' acquired negative characteristics.

The effects of the nuclear tests discovered in the population of the Semipalatinsk region are not caused by harmful radiation, which is constantly being controlled there and has always been at levels considered safe, usually lower than those found in highly polluted cities.

The deformities are the result of tremors and vibrations caused by the explosions.

Asked if such effects could appear in the populations of regions near nuclear power plants, Professor Inyushin said that such a possibility did exist, but added that lengthy scientific investigation would be needed to prove it.

Perm Residents Discuss Underground Nuclear Tests

LD2204173790

[Editorial Report] Moscow Domestic Service in Russian at 1500 GMT on 22 April broadcasts a report by Perm correspondent Mikhail Klepov entitled "The Secret of the Nuclear Tests." He speaks about his recent visit to the northernmost town in Perm Oblast, Krasnovishersk, with USSR People's Deputy Anatoliy Afanasyevich Shchelkonogov, who was meeting voters. Among the questions asked were some pertaining to the level of radiation in the rayon, and the prospect for further tests there. The correspondent asks Shchelkonogov to speak about the issue of nuclear tests in the area in great detail.

Shchelkonogov recalls that he had to investigate the ground nuclear tests carried out in the north of Cherdynskiy Rayon during the grandoise program for pumping the waters of northern rivers to southern rivers. He says: "Two ground nuclear tests were carried out and still today, over twenty years since those tests, the level of radiation at the site of the tests exceeds by more than ten times the natural background." He explains that residents were afraid to ask questions about the tests at the time. There was a similar situation more recently nearer to Krasnovishersk, but again no consideration was taken of the concerns and wishes of residents.

He then expresses his thanks to Lev Dmitriyevich Ryabev, deputy chairman of the USSR Council of Ministers, who sent a commission made up of representatives of the USSR Academy of Sciences, the USSR Ministry of Health, professionals in the oil industry, and geologists, and agreed to any number of residents of Krasnovishersk being included on the commission. He concludes: "And this commission, having examined in detail the whole state of affairs, signed a definite act, and gathered people together in the largest hall in the town of

Krasnovishersk. The conversation, the exchange of views went on for a long time. Additional measures for radiation safety and a monitoring system, and so on, have been worked out. I received an assurance from Comrade Ryabev, deputy chairman of the USSR Council of Ministers, that it is not planned to carry out further underground nuclear tests in this region."

Perm Outlaws Construction of Nuclear Station

LD2804092390 Moscow Domestic Service in Russian
0600 GMT 28 Apr 90

[Text] Will there or will there not be a nuclear electric power station [AES] in Perm Oblast? Animated discussion on this subject continues in the western Urals. The building of the AES was planned for the northern part of the oblast, in the Komi-Permyat Autonomous Okrug.

A decision now has been made at a session of the oblast soviet of people's deputies of the new convocation. It says that planning and survey work in the area of the possible location of the station must be curtailed immediately. A separate paragraph states: The design and construction of the AES on the territory of Perm Oblast is forbidden.

Antinuclear Movement Set Up in North

LD2304190390 Moscow TASS International Service
in Russian 1220 GMT 23 Apr 90

[Report by TASS correspondent Vladimir Anufriev]

[Excerpts] Arkhangelsk, 23 Apr (TASS)—A consolidation of forces advocating a nuclear-free north and an end to nuclear test throughout the world—such is the aim of a public committee that has been set up here, "Novaya Zemlya-Nevada." It was founded by nongovernment organizations—the Arkhangelsk Peace Committee and the branch of the Soviet Peace Fund located in this port town on the White Sea. [passage omitted]

Test sites have existed on the Arctic islands for a long time. In the early fifties the nomadic reindeer breeders, the Nentsy, who had lived since ancient times in these extremely poor and severe territories, were moved from here to the mainland. Up until 1963, when the nuclear powers signed a treaty to end nuclear tests in three kinds of environment, lethal explosions were carried out here directly in the atmosphere.

Radar Station Threat to Environment Denied

PM0904142590 Moscow KRASNAYA ZVEZDA
in Russian 7 Apr 90 First Edition pp 1,5

[Interview with Colonel General of Aviation V. Kraskovskiy, USSR Defense Ministry representative, by own correspondent Lieutenant Colonel A. Dokuchayev, under the rubric "Topical Interview": "Facts and Conjecture About Radar Station in Transcarpathia"; date and place unspecified; first paragraph is editorial introduction]

[Text] The USSR Council of Ministers State Commission set up with a view to assessing the socioecological situation which has arisen in the vicinity of the construction of a radar station near the Transcarpathian village of Pestryalovo has completed its work. Our correspondent met with Col. Gen. of Aviation V. Kraskovskiy, member of the commission and USSR Defense Ministry representative, and asked him to answer a number of questions.

[Dokuchayev] Volter Makarovich, could you fill readers in on the commissions' conclusions?

[Kraskovskiy] First and foremost, I would note that the new radar station in the Mukachevo region is being set up at the decision of the Soviet Government to replace the current radar station. It is designed to detect ballistic missiles and to track spacecraft. At all of the radar station's planning and development stages an unwavering condition, along with the fulfillment of its combat tasks, was to rule out any harmful impact from the installation on people's health and the environment.

The commission reaffirmed that this condition has been carried out. The actual planned capacity of the radar station's electromagnetic current will not exceed the normative set by the "Provisional Health Norms and Regulations To Protect the Population From the Impact of Electromagnetic Currents Generated by Electronic Installations." At the same time, and bearing in mind the sociopolitical situation in the region, the commission recommended that engineering and technical solutions which would make it possible to reduce the electromagnetic current by 100-1,000 times below the normative be employed at the concluding phase of the radar station's construction. How will this be achieved? The radar's average emitted capacity will be cut, emissions in the direction of Pestryalovo Village will be algorithmically reduced, and a protective biological screen will be set up 150 meters away from the transmission center. Those were the main conclusions.

[Dokuchayev] But the report issued by TASS stated that the commission had concluded that it was inexpedient to continue building a radar station in Transcarpathia...

[Kraskovskiy] Let me be brief. Our commission was simply not empowered to make such a decision. It was set up to assess the socioecological situation in the area and, if necessary, to elaborate solutions to improve that situation. Only the country's top leadership is entitled to make any decisions on the radar. The station is a highly important defense installation.

[Dokuchayev] We're both military men, and readers might get the impression that we're putting forward departmental views. Were there any independent scientists on the commission, for instance?

[Kraskovskiy] Of course, it was a state commission. Thus, the subcommission assessing the possible medical

consequences of the radar's construction included representatives from the USSR Academy of Sciences' Biophysics Institute, the USSR Health Ministry's Biophysics Institute, Uzhgorod University, the USSR Academy of Medical Science's Labor Hygiene and Occupational Diseases Institute, and doctors from Mukachevo and Uzhgorod. I have already noted the academics' conclusion on the question of electromagnetic radiation: The installation has no harmful effect on people's health. I would add that our normatives for the population are substantially below the U.S. standard and the recommendations of the international committee for protection against nonionizing radiation.

[Dokuchayev] There are fears that the station will use a great amount of water, which is already in short supply...

[Kraskovskiy] There were inaccuracies in the TASS report. What is the essence of the problem? The radar is an installation which uses water—maximum consumption is 1,800 cubic meters a day. Now a rumor has started to circulate to the effect that the area will be left without any water and that the 300 sources of curative mineral waters located in the oblast would be harmed. Just what is the real picture? The hydrogeological research that has been carried out has shown that the impact of the planned water intake for the station will not be the same for subsoil water and natural springs. Yes, there have been cases of wells running dry in Pstryalovo. However, this is not linked with the sinking of exploratory wells. There is another reason—land reclamation measures.

And the water intake could not have any impact on mineral water sources. This is ruled out by the distance (20-30 kilometers) and by the fact that the intake is located at a lower level—100-150 meters lower. The Chop-Mukachevo Depression and the Latoritsa River, which prevent the reciprocal influence of fresh and mineral waters, are located between these water deposits. Those are the facts.

In order to resolve all the issues, the planning organization has elaborated a technological version of the station's operation using air-cooled units. What is the advantage of this? Water consumption will be cut from 1,800 to 350 cubic meters. And the extra underground water will be used for the population's needs. This will considerably improve water supplies to the population of Mukachevskiy Rayon, who are short of potable water.

[Dokuchayev] So where have the Transcarpathians' fears come from?

[Kraskovskiy] Generally speaking, interest in the station is a normal process, and ecology is at the center of people's attention worldwide. The problem lies elsewhere: Why have passions failed to subside for so long? For certain elements the illusory fear of the station has become the touchstone of a political campaign and a reflection of all the other shortcomings in the oblast. It had been agreed that a nuclear reactor would operate at the station. How could feelings fail to be inflamed?

I think that this is the fault of us military specialists too. For some time we have delayed issuing to the population full information on the installation, and there has been conjecture which has been exploited by political speculators.

What has been done to brief the Transcarpathians on the radar station? A commission set up by the Ukrainian SSR [Soviet Socialist Republic] Government to assess ecological safety has worked at the station. Its report was published in the newspaper *ZAKARPATSKAYA PRAVDA*. It did not differ in its main parameters from what was determined by the materials of the study carried out by Defense Ministry scientific institutes at the planning stage.

Military specialists spoke at a session of the oblast soviet and met with labor collectives and residents of the surrounding areas. We intend to continue our explanatory work. We have no secrets from the Transcarpathians, since we need good contacts and harmony.

[Dokuchayev] Volter Makarovich, I'd like to know your opinion of the radar as a most important defense installation. After all, such radars, along with other systems, are a factor for restraining aggression and preventing the outbreak of nuclear war. Each of us should remember that.

[Dokuchayev] I have already noted that the station is a means of providing early warning of a missile attack. The existence of such installations in the USSR and the United States is envisaged by the relevant treaties. And the balance in this area should in no way be upset.

The station also carries out the task of tracking foreign and Soviet spacecraft. There may be cases when some spacecraft fragments fail to burn up on reentering the earth's atmosphere and could fall to earth. These fragments could be misconstrued as ballistic missiles attacking our country. We need radars to ensure that such situations do not entail unpredictable consequences.

Supreme Soviet Hears Report on Chernobyl

LD0205121890 Moscow Television Service
in Russian 1654 GMT 25 Apr 90

[Speech by Yuriy Antoniyevich Izrael, chairman of the State Hydrometeorology Committee, at 25 April Supreme Soviet session in the Kremlin in Moscow—from the recorded relay]

[Text] Esteemed comrade chairman, esteemed deputies. First of all, the USSR State Committee for Hydrometeorology fully supports the programs submitted for examination today, both the republican and the union ones. Insofar as it falls within the competence of the committee, the state committee has participated in the compilation of the union part and, naturally, in the republican ones to some extent, when they were being discussed.

I will later make a few remarks about the programs but most of all I would like to speak about several issues which have been raised today in connection with information about the radiation conditions which arose as a result of the tragedy of 26 April 1986. A few words about what the USSR State Committee for Hydrometeorology has done over the past year, since I spoke to you a year ago, taking into account the criticism and the instructions given to us, to the State Committee for Hydrometeorology.

We have issued maps—you have seen them in the foyer—and they have been published in the central press and in local newspapers. We have established a definite procedure by which this information comes in to the areas and to the local authorities, and it is published for the whole population. I would like to stress straight away that this information [changes thought] some in the press and some of what has been heard in speeches here has alleged that it has been altered. I would like to say that of course it has gained more and more in detail, since there has been time to take more detailed measurements, but I would like to stress again that as early as the beginning of May, the overall area, the overall contamination was determined using aeroplanes and helicopters, and this was published; and using isolines of 0.05 milliroentgens per hour it amounted to 200,00 square kilometers at the beginning of May. If today figures are to be heard for the area contaminated with caesium-137 upwards of one curie per square kilometer amounting to 100,000 sq.km, then you will see that this is approximately the same area as the area which was photographed as early as May 1986. This was more in order to determine what patches were where.

A little has been said here about zones of contamination on the territory of the Russian Soviet Federated Socialist Republic [RSFSR], apart from Bryansk oblast. Yes, the information about Tula oblast, about the town of Plavsk, about Orel oblast and Kaluga oblast, was found out and was passed on. I will list shortly where it was passed on to, and we have spoken and written about this, as well. It was passed on to the operational group of the CPSU Central Committee that was formed, to the government commission. It was passed on to the leadership of the RSFSR, to the leadership of Ukraine, to the leadership of Belorussia, and to all the ministries involved in eliminating the aftermath of the accident at the Chernobyl atomic power station, and also to the local authorities.

Yes, indeed, there has been criticism of us as well, and I have spoken about this. Yes, indeed, this information, these maps were not published, for reasons which you know, in the newspapers. I will tell you the reasons: the population, for the most part, as far as this information is concerned, did have access to this information, if not in such detail as one could get from the map. You know that straight away, in May, and then a few months later, the population was accorded certain benefits, according to the criteria established of 15 curies for caesium, three curies for strontium and one tenth for plutonium.

You know that there are people who receive 100 percent, 75 percent, and 25 percent wage increments, to say nothing of the small sums which have been introduced for produce that is pure. What is the reason that this information failed to be published in the press? Immediately following the accident, there was a period when information was in the process of being compiled for the IAEA and for the purpose of giving it coverage, broad coverage. All this information is in the reports and it has been published. Yes, it is indeed the case that this information was not published in detail in the maps, because the procedure was such that in the event of serious accidents this information was privileged and was being offered to all the organizations dealing with eliminating this accident. That is what the procedure was like and we are no exception as far as all these organizations and departments are concerned. I can say, and repeat yet again, that the local authorities did have these maps and this information. So we bear an equal share in the responsibility for the publication or nonpublication of this material. After all, the first question is: Was there any information? Yes, there was information. It was given out, and it only changed in respect of detail. That is the most important thing.

Apart from that, the measurements that we carried out were performed in accordance with the criteria that were presented. Initially, it was necessary to save people from the external gamma radiation, and we really did measure the area—we singled out and identified the area—where a person might pick up more than 10 rem during the first year. This criterion, which was provided by the Ministry of Health, was the main one, and we carried out the first screenings, taking this criterion as our starting-point. This was the first stage of the government commission's work, and this work by the government commission was, from my point of view, carried out very vigorously and very efficiently.

The second stage was when the isotopes were measured—the composition of radionuclides. These isotopes were measured during May and June. In July, they were reported at a meeting of the Politburo's operational group—in July—and there was a dilemma here. There was one criterion then: 10 rem during the first year. There was a dilemma: Either we had to move members of the public out, wherever; in the long term, if they lived there for a long time, people might receive a dose of internal, as well as external, radiation. I am saying that, initially, external radiation was the more dangerous. There was the question of whether to cut off internal radiation by not consuming local, locally produced food or to lose these people. This decision was being made in July, and the evacuation of those villages that was adopted, and is regarded as the second stage, occurred during August and, perhaps, September. An additional 34 villages were evacuated: 29 villages in Belorussia, four villages in the Russian Federation, and one village in the Ukraine—Bober. The republics thought that they could supply uncontaminated food to the villages that are located on the borderline where the external radiation is

under 10 rem and the internal radiation may be more. We in the Ministry of Health and State Committee for Hydrometeorology, since we provided those figures when calculating the doses, also, of course, signed these proposals. They were adopted in July, I repeat.

To continue, the next stage is the one that we are experiencing now, because, after the first three years, for which the Ministry of Health had issued the criteria 10 rem [roentgen-equivalent-man], 3.5, and 2.5 rem, the Ministry of Health worked out the concept of 35 rem in 1988. This has been mentioned many times today, and the concept has been severely criticized and subjected to widespread discussion. Since it was necessary to decide what should be done next, the government, it seems to me, properly proceeded in the following manner: without waiting for the end of the scientific discussion, it evacuated the villages that have radioactivity and caesium contamination of over 40 curies/sq km—in other words, without waiting for people to absorb a higher dose. It introduced for those families either a decision stating "which have children and pregnant women," or programs which set out the question of voluntary evacuation. [sentence as heard]

Clearly, we must very seriously consider that question, talking not only about specific criteria, but, in general, of the whole range of contamination. The question arises here of measurements. Broader measurements are required here. The measurements we made and those made up to 1 curie/sq km require more detail. We have conducted over 100,000 trials. But today, if approval is given to a program and approach involving voluntary evacuation, then every person needs to find out how much contamination there is in his own yard, his own home, and in the street where he lives. In other words, an enormous quantity of measurements is required.

Belorussia, for example, will even set aside the question of measuring the state of radioactivity, and the radiation situation in general, in those villages in Belorussia. It really is a vast amount of work, which must, clearly, be done very broadly. That's the trouble: it's not ready. A certain part of that work will be carried out. Subsequently, there will be both the funds and, apparently, the extension of that work—the creation of special, perhaps financially autonomous, organizations that might be able to finish the work quickly.

We're talking about the third and fourth stage. I, as a forecaster in this particular case—it was correctly said here that our program has no forecast, and that's a shortcoming—I think that the examination of questions about the population, about the evacuation of people, will not end with today's examination. We must keep on forecasting, and so it really is necessary to possess information. It is, of course, necessary to possess certain calculations in the field of socioeconomic directions, because evacuation is now taking place not only through

radiation factors, but with account being taken of socio-economic causes. All these matters must be borne in mind, and the vast amount of work must, clearly, be continued.

Now, very briefly, since I've been asked still more questions—the question of Korosten, the town of Korosten. How hard we found it to handle something that we previously knew nothing about! [laughter] We encountered the following difficulty, and the population came up against it, too: in some places that were relatively not heavily contaminated spots where very high levels of contamination suddenly started to appear.

Korosten is an example. The average contamination level there is 6-7 curies/sq km throughout the zone. But spots have appeared there in which, expressed in square-kilometer terms, these levels attained 200 curries/sq km. You understand? But they don't measure a square kilometer. They are small spots, a few square meters or tens of square meters in size, that have formed or have just flowed together from roofs, or that have formed as a result of passage of contaminated equipment, and these spots have to be eliminated immediately.

There were requests on the subject, and civil defense actually said that, specifically in order to eliminate these hot spots, as has been described in PRAVDA, a team has been organized in Korosten that is carrying out, and has already practically finished, the decontamination of these hot spots. As for the decontamination of the whole of Korosten, about which there have also been questions, Comrade Govorov, the head of civil defense, says that, according to their plan, this should be happening in May.

However, as far as these hot spots are concerned, I just want to explain. They do, of course, demand very serious attention, but in Korosten specifically, their area amounts to 16,000 sq m, while the town's area is 35 sq km. In other words, one-tenth of one percent of the area. But, of course, these spots are impermissible. They must immediately be decontaminated as soon as they appear. They will appear in various towns and villages. This must be borne in mind.

Now for the last thing spoken of here. I don't think now is the time to draw the discussion out, but I am returning to it once again, since deputy Shcherbak has raised this question—it is the question of the evacuation of the city of Kiev. We, as experts, provided our findings as experts about the absence of indications for evacuation of the city of Kiev on 7 May 1986, the matter concerned evacuation of the whole city insofar as it was from the point of view of evacuation of the children, but at the session of the bureau of the Ukrainian Central Committee the question of speedy evacuation of children was examined, and this was settled in the affirmative, that is, the next day a resolution of the Ukrainian Council of ministers came out which prescribed cutting the school year short to 15 May and evacuating schoolchildren up to the seventh grade as far as possible, to places which were not contaminated as a result of the accident. We

were present all the time, and now, of course, one can interpret things in various ways, but I would like to say that we participated in this part of the discussion, and we were in agreement with this. As far as an evacuation is concerned, indeed, that is the conclusion we came to as experts. Naturally, one could have turned to other experts, if our findings were thought to be incorrect.

The final thing concerned with the program—there is a major observation. Where they speak of information centers, I would consider that these information centers, which will compile bulletins and so on, need to be combined with press centers. It is extremely important to establish centralized information in the broad press which is accessible to everybody, because the broad press—I won't quote any figures, because there are a great deal of very crude distortions, unfounded accusations, it is very difficult to react to all of them, we have to explain things literally almost every day because of this, and I think that if the information centers are combined with press centers, this will be extremely useful, and extremely useful work will be done.

The last thing I would like to say about the programs is that they have said here that it has taken four years to arrive at the programs; but the first years, the first two years, were also a program being implemented by the whole country, and this should not have been discounted by any means. I don't know, I don't want to argue with anyone or make accusations, but after all, many of those who are presently being given the floor—in particular I am here, and my colleagues, and the medical men, and those from the State Agro-Industrial Committee, and so on and so forth—we were there the whole time, months at a time, in the zone of the Chernobyl accident, and first and foremost precisely in those zones which were being evacuated first of all. That is so. And then the area began to embrace more and more in quantity, after these issues were really studied, medicine added new findings, and experts were involved—and you know the conclusions of the experts.

I have received one question: you should not refer to the IAEA—I am not referring to the IAEA; are you familiar with the 1987 report by Mr [as heard] Gro Harlem Brundtland, chairman of the UN International Commission for Environment, which raises the question of depriving the IAEA of rights as an extradepartmental expert body, since there are signs of international lobbying in the IAEA, and the IAEA is a commercial organ with an interest in the development (of atomic power stations)? I think that it is not worth answering this question, because I think we can decide for ourselves which international organizations we call in, or it is worth calling in. So, taking this into account, of course, we have to think about this serious question. We know, of course, that the IAEA is a respectable organization, but if we go completely into details, then at the moment, for example, people, organizations have emerged which have started making their own measurements, independently of the existing procedures. They go off and gather earth in sacks, they bring them to these cooperatives or

these people—who are these people doing the measurements? We don't know. Of course, what is needed here, I consider, is definitely the coordination which we have had up until now.

Masol Evaluates Ukrainian Environmental Priorities

90US0706A Kiev PRAVDA UKRAINY in Russian
17 Feb 90 pp 2-3

[Speech by UkSSR Council of Ministers Chairman Deputy V.A. Masol: "On the Ecological Situation in the Republic and Measures for its Radical Improvement"; 16 February 1990, UkSSR Supreme Soviet]

[Text]

I.

Esteemed chairman, esteemed comrade deputies!

Today, the session of the UkSSR Supreme Soviet is considering a very important and complex issue. The current ecological situation in the republic is tense, and in individual regions, it is nearly critical. This demands joint decisive actions in the name of people's health, in the name of our future.

The very fact that this issue is being discussed in the highest legislative organ of the UkSSR government is taken as a sign of the great perturbation and concern of the deputies and the public at large over the state of the environment.

Permit me first of all to pause upon the fundamental causes of the exacerbation of ecological problems.

It should be noted that the status of the environmental situation today is closely linked to the entire historical course of the development of the republic and its production forces.

The presence in the Ukraine of significant fuel and raw mineral resources, qualified personnel, and territorial proximity to the country's industrial-consumer centers conditioned during the years of industrialization the swift development of the republic's heavy industry. As we all recall quite well, during the Great Patriotic War, in effect, everything created by our people's labor was utterly destroyed.

The years of the post-war restoration of the national economy were associated with the necessity of providing people and industry with everything needed—coal, electric power, metals, the production of other base branch production lines—in the minimum time periods. During this period, the issues of environmental protection were not raised as urgently as they are now; the circumstances themselves did not allow them to be shown the needed attention.

Of course, all of this does not justify our actions, yet it was precisely in such historical-economic conditions that

the structure and scale of the economy of the Soviet Ukraine were formed. And now, occupying less than 3 percent of the territory of the USSR, the republic produces almost one-fifth of the country's public product. The proportion of the output of the means of production in our industry in recent years has exceeded 70 percent on a stable basis.

A critical analysis of the situation which we are now experiencing testifies to the fact that at the foundation of the exacerbation of the ecological situation lie such outmoded concepts as the limitlessness and inexhaustability of natural resources, and the wasteful mechanism of utilization of nature exploited for decades.

To this should be added the shortcomings already admitted today in the development and placement of the republic's production forces and the low technological level of industrial production, where the needed attention was not directed to the development and inculcation of ecologically clean and non-waste producing technologies over the course of many years. This was often done under the guise of saving resources of which we never had enough. As a result, ecological ignorance long flourished at various levels of management and administration, failing to permit the explanation that today's ecology is tomorrow's economy.

The increase of the republic's population by almost 17 million people over the years of Soviet power required an increase in the scale of agricultural production, and intensive utilization of land reserves. This led to the impoverishment of a substantial portion of our agricultural lands.

It must be said that the true state of the environment was groundlessly hushed up for a long time. Only now can we say out loud and openly that a consumeristic approach, essentially, the monopolism and dictatorship of the union ministries and departments reigned in the placement of new production within the territory of the republic. Not infrequently, the construction of enterprises was implemented by them without even the consent of the republic organs, without the proper inventory of local needs and ecological consequences.

Such, as they say, is the historical truth. It is this that testifies to the fact that the excessive burden on the natural environment continued in the Ukraine for decades; shortcomings were permitted in the organization of comprehensive utilization of natural resources. The accident at the Chernobyl nuclear power station complicated the situation to the extreme and destroyed the ecological balance.

As has rightly been emphasized in many deputies' speeches at the last session of the UkrSSR Supreme Soviet, the time has come to principally evaluate the existing ecological situation in the republic. This will permit a correct definition of the direction of activity for its improvement.

At the same time, we feel that the new body of the UkrSSR Supreme Soviet and UkrSSR government must take such organizational measures and develop such legislative acts as would simply make it possible to be guided by such approaches in the resolution of vitally important environmental protection issues, since they concern every person in our republic.

II.

Comrade deputies! Before reporting to you in detail on the state of the ecological situation, I would like to note that stormy discussions on this issue, its pointed and heated discussion probably await us today. This is natural. However, in order that our sense of balance and objectivity not ultimately change, allow me to briefly remind you of certain measures which were taken by the government to improve the ecological situation, and of what has been done and what is being done in this direction.

It should be noted that recently, the republic Council of Ministers, the local soviet and economic organs have begun to pay significantly more attention to the resolution of these complex problems. A number of important decrees aimed at improving the utilization of nature have been adopted.

Our approach to the placement of ecologically harmful enterprises has been changed radically. The government has introduced a procedure according to which the development plans for all branches of the national economy, new construction projects, reconstruction of enterprises and individual facilities must now necessarily pass through ecological analysis.

Owing only to this, in recent years, one out of every three projects has been returned for further work; consent for the construction of many new industrial sites has not been given. In particular, these are such ecologically hazardous enterprises as a factory for producing chemical agents for the defense of vegetation in Ternopol Oblast, new capacity at the Kremenchug protein-vitamin concentrate plant, and a biochemical plant in Lvov Oblast, and others.

Taking into consideration the possible negative ecological effects, we adopted a resolution on the prohibition of the construction of the Dnepr-Bug water project hub. The designing of the Danube-Dnepr canal was halted in accordance with the UkrSSR Council of Ministers. A decision on the limitation of nuclear power development in the republic, and the prohibition of industrial construction not connected with the social progress of a health resort in the Crimea was recently adopted.

The realization of many environmental protection measures, conducted at the initiative of the UkrSSR government or controlled by it, has also been promoted by the active position taken by the UkrSSR Supreme Soviet Presidium, its permanent commissions, deputies, scientists, and the population of our republic at large. The

necessary material-technical and financial resources have been allocated for this.

Over 4 years, almost R8 billion in funds from all sources of financing were spent on implementing measures for environmental protection, with the sum of these resources growing from year to year. Thus, the volume of state capital investment specified for this goal in the current year is 1.4 times higher than it was at the beginning of the 5-year-plan.

This permitted the introduction into operation of facilities for treatment of waste water, systems of water supply recycling. Despite a significant growth in industrial production, fresh water consumption demand has decreased slightly. In industry now, over 150 enterprises, shops, and production lines work with non-discharging water supply systems. Among them are the 1 May production association "Khimprom," the Stakhanovskiy ferrous alloys plant, and the Upper Dnepr mining-metallurgical combine.

Since the beginning of the 5-year-plan, gas dust cleaning installations with a capacity of 18 million cubic meters of natural gas per hour have been brought on line; they have reduced discharges of harmful substances into the atmospheric basin by almost 15 percent. The rate of recultivation of degraded land has increased; its volume has reached 26,000 hectares annually.

A correction has been made in recent years of the general development plans of the majority of cities and health resorts, and the rayon planning projects. Comprehensive territorial plans for environmental protection of such ecologically complex cities as Dneprodzerzhinsk, Krivoy Rog, and Dnepropetrovsk have been developed, as well as for Donetsk Oblast and a number of other resort areas of the Crimea.

Work has been conducted for increasing the republic's nature reserve fund, the area of which has grown by more than 120,000 hectares. The "Sinevir" national nature park has been created, 19 state special reserves, an arboretum [dendropark] in the city of Berezno in the Rovno Oblast area, and the "Medobory" nature reserve in Ternopol Oblast. The situation has been improved significantly in the "Askaniya-Nova" biospheric reserve of international import. Several green zones in cities and industrial centers have been expanded.

Nonetheless, it should be frankly stated that obviously not enough has been done, as is evidenced by the state of the ecology in the republic today. The government feels that time is needed to correct the situation, no small amount of funds, and significant material-technical resources. And the main thing is that our action on all levels must be immediate and decisive.

The problem of preserving the atmosphere is extremely topical for the republic. Over 10 million metric tons of harmful substances are discharged into the atmosphere annually by industrial pollution sources. They mostly come from ferrous metallurgy, the chemical, petroleum

processing, and coal industries, the power and construction materials industries. The air pollution level is very high in cities such as Mariupol, Zaporozhye, Donetsk, Dneprodzerzhinsk, Kommunarsk, Krivoy Rog, and Makeyevka.

The primary reason for this is the imperfection of the technological processes, and the unsatisfactory outfitting of industrial enterprises with treatment equipment. Thus, in power engineering, the chemical and coal industries, only 30-40 percent of the pollution sources have treatment installations, and in petrochemicals, 20 percent. And no less damage is done by the low work efficiency of the treatment equipment. The UkrSSR Goskompriroda [State Committee for Environmental Protection] organs checked the work status of the gas dust treatment assemblies at the Voroshilovgrad and Krivoy Rog GRESs. It turned out that practically all of them were in disrepair or worked with very low output.

Unfortunately, such examples are not isolated. They testify to the low level of production expertise and technological discipline. Of course, fines are being levied upon the individuals guilty of these gross violations. But after all, in no way can they compensate for the damage done to the environment and people's health.

This is what I would like to say on that subject. Everyone understands that there are people at every treatment installation who service it and answer for disrepair. There are sanitary and epidemiological stations in the city or rayon, environmental protection workers, and finally, there is an enormous quantity of public organizations, various associations of the "Zeleniy Svit" type, all sorts of committees for nature conservancy. The question is then asked, why does such a numerous army of nature's guardians and defenders allow such outrages, and why does it not prevent them?

I want to summon everyone to joint work, so that order can be brought to every enterprise through common efforts and decisive actions.

The problem of pollution of the atmospheric basin by motor vehicle transportation is acquiring ever greater urgency. They are the source of more than one-third of the total volume of harmful discharges into the atmosphere, and in Kiev, Lvov, Poltava, and many resort cities, over 70 percent. In one out of every four motor vehicles checked, their toxicity exceeds the permissible norm.

What measures does the government envisage for improving the situation?

We consider the development and implementation of an ecologically based strategy for the further development of the republic's economy to be of the utmost importance; it must take into more complete account the status of its natural resource potential. Such an approach found its reflection in the draft Plan for the development and placement of production forces of the Ukrainian SSR for the period until 2005.

In particular, the plan provides for cardinal structural changes in the economy, its reorientation toward the priority development of processing, foodstuffs, and light industry, the expansion of consumer goods production. The resources and production potential will be directed first and foremost toward the production of science-intensive products, toward those spheres of activity which promote an improvement in human life, the satisfaction of needs.

Mining enterprises, resource- and water-intensive, energy-intensive, and other ecologically hazardous branches of the national economy will be developed in a more limited manner. Thus, the proportion of production of the fuel and metallurgical branches in the total volume of industrial output will be reduced 1.9-fold, and of the chemical industry, 1.5-fold.

Secondly, in the future, the development of the enterprises of heavy industry, especially with ecologically harmful production, will be realized only at the cost of their reconstruction and technological retooling, with the application of low-waste and waste-free technologies. This strategic line is being realized by a reorientation of capital investments. Over 4 years, the volume of resources directed toward the reconstruction of operational production lines has grown 1.5-fold.

The issues of protecting the air at enterprises of the metallurgical and fuel-energy complex are still being resolved slowly, particularly in thermal power engineering, which is the source of almost one-third of all industrial discharge. Here, the problems of fuel quality, the development and introduction of modern gas purification technologies and equipment have become urgent.

Much talk is now going on over the chemical enterprises, especially those that use unimproved equipment and obsolete technologies. Here, the government also observes ecological priorities. In recent years alone, capacities at the chemical enterprises of Gorlovka, Konstantinovka, Sumy, Cherkassy, Rovno, Dneprodzerzhinsk, Severodonetsk, and other cities have been taken out of operation.

The reconstruction of the Kiev production association "Khimvolokno" has begun, as has a fundamental reprofiling of the Kiev chemical plant for the production of polyurethanes, at which the work of four ecologically hazardous production lines has been halted this year. We did not support the proposal of union organs for the construction of 15 new chemical facilities.

At the same time, we cannot agree with the fact that here and there in the provinces, the opinion is being formed without balanced economic and social calculations, rather on an emotional wave, on the substantial reduction of the production of certain types of chemical products, first and foremost, washing products, polymer materials, synthetic resins and fibers.

We must remember that without this important raw material, we cannot seriously talk about increasing production of modern consumer goods or furniture, or even about improving people's lives in general.

Recently, certain enterprises have ceased production of valuable products going into the production of medicine and medical preparations. We do not have enough of them as it is, and such poorly planned actions will lead only to an exacerbation of the situation and an even greater shortage.

Here is some confirmation of this for you. The Bakhchisaray construction industry combine refused to process manganese slurries, which, according to the USSR Ministry of Health, are completely non-toxic. Because of this, the country's only enterprise producing potassium manganate, located in Saki, may halt work. And this is called concern for the improvement of our people's health.

I recently visited the FRG, the territory of which is 2.5 times smaller than our republic. Yet there they produce 10 times as much synthetic resins and plastics, and 5 times as many chemical fibers as in the Ukraine. And the issue of shutting down chemical enterprises does not arise there; after all, they are operating on modern technology, they have improved protective assemblies and equipment. The people working at them could not even think of allowing the possibility of neglecting the rules of operations.

We have to change people's psychology here, and our scientists must introduce more rapidly the most advanced technological processes at enterprises. Since, in the final analysis, environmental protection is our benefit.

The third direction is the erection of environmental protection, particularly water- and gas-treatment facilities. The volume of such construction is growing annually. Capital investment in the indicated goals over 4 years increased 1.5-fold compared to the last 5-year-plan. The main thing now is to fully utilize the resources allocated for this. Unfortunately, not everything is in order here. Over the years of the current 5-year-plan, R170 million of the R2 billion allocated remained unassimilated.

We can no longer reconcile ourselves to this. The republic Ministry of Construction, Montazhspetsstroy, Ukrainian Agrostroy, and the oblispolkoms must consider the course of the execution of the tasks for environmental protection, and increase the responsibility of and demands upon those managers who are not providing the sector in their work jurisdiction.

Under modern conditions, great sociopolitical significance should be attached to the construction of environmental protection facilities and the strict observance of ecological requirements at every enterprise.

The fourth important trend concerned with treatment of the air is associated with the reduction of air pollution by automotive transportation. For this purpose, the government recently confirmed a special program for whose realization R170 million has been allocated. The problems of the transition of all the republic's automotive transportation to cleaner types of fuel—unethylated gasoline and low-sulfur diesel fuel—have been defined. Even this year, more than half of the gasoline will be produced using new technology.

The implementation of the indicated program requires the technical retooling of petroleum processing plants, which, among other things, will make it possible to almost double the production of asphalt. And this is an improvement in road surfacing which will also promote a reduction in the discharge of harmful substances into the atmosphere.

The purposeful work in the republic for the transition of motor vehicles to liquified and compressed natural gas fuel will be continued. In recent years, about 70 gas-filling compressor and natural gas-pumping stations have been built and brought into operation. This has made it possible for almost 50 million motor vehicles to make the transition to natural gas fuel, and substantially reduce their harmful emissions.

The implementation of the range of measures stipulated by the draft State program for environmental protection and rational utilization of USSR natural resources through 2005 will allow for a reduction of discharges of harmful substances into the atmosphere to the maximum permissible quantities. This must become the program's final goal.

The status of the water resources whose pollution complicates the water supply remains complex. Last year, 2.5 billion cubic meters of polluted waste water was discharged into the republic's bodies of standing water. The main polluters are the ferrous metallurgical and coal industries, the community economy, the forest-chemical and agro-industrial complexes. And despite this situation, the building of water treatment installations is being carried out most unsatisfactorily.

Tell me, what, other than elementary irresponsibility, can explain the fact that in Dnepropetrovsk, the construction of treatment facilities on the right bank has continued for almost 20 years, but the construction of similar facilities on the left bank is taking 8 years already. And this is under conditions in which 370 million cubic meters of polluted waste water, or 14 percent of the total republic volume, is discharged into the Dnepr annually.

Comrades, in that same Dnepropetrovsk there works a large quantity of deputies, from the rayon echelon to the UkrSSR Supreme Soviet. Why aren't their efforts, their exactingness directed toward the improvement of environmental protection construction in the oblast; why have they calmly observed this long-term construction for 20 years? Finally, why have television, radio, and the

mass information media not once cited all the guilty parties of this outrage by name?

Water is utilized quite senselessly at many enterprises. Forty percent of the sugar refineries do not have water supply recycling systems. Enterprises of the chemical industry continue to pollute the Severskiy Donets river with industrial waste waters, causing a literally threatening situation to form in the entire Lisichansko-Rubezhanskiy region.

The issue of improving water provision and the ecological situation overall must become one of the main tasks of the newly-elected government and the local soviets of people's deputies.

The problem of small rivers, the majority of which are in a state of neglect, remains urgent. There are many reasons here. In particular, it has become a mass phenomenon to plow the embankment areas cutting down to the water, and to place mineral fertilizer storage and summer livestock sites in water conservation zones. However, to be frank, both the ispolkoms of the soviets of people's deputies, and the environmental protection organs have reconciled themselves to this situation.

Significant resources are needed to bring small rivers back to a normal sanitary status, to renew their water level. According to preliminary calculations, this amounts to over R2.5 billion. We must seek sources of financing these jobs. They will be partially implemented at the expense of enterprises and organizations, and an increase in payment for the water they use. It is necessary to determine in every oblast the concrete volumes of these jobs and the time frames for their execution.

And one other thing. At the past session of the republic Supreme Soviet, certain deputies quite rightfully posed the question of bringing order to the water main-sewerage resources. A substantial portion of its network is in unsatisfactory technological condition. This is one of the causes of the periodic exacerbation of the sanitation and public health situation, especially on the Black Sea and Sea of Azov coasts. Many other treatment facilities function poorly, and do not provide the necessary treatment. And the people working there have reconciled themselves to this, for there is not the proper exactingness on the part of the managers.

We must take decisive measures for the complete cessation of the discharge of polluted waste waters into bodies of water. For this, we are faced with building water treatment facilities with a total capacity of 11 million cubic meters per day, that is, to almost double them. More than one-half of the volume of these jobs are slated for implementation in the coming 5-year-plan.

Under the conditions of worsening water quality from surface and underground sources, the problem of providing the population with drinking water takes on particular importance. Minvodkhoz [Ministry of Water

Resources Construction] and Minzhilkommunkhoz [Ministry of Housing and Communal Resources] are faced with great tasks here.

The UkSSR Academy of Sciences, and workers in community resources must accelerate the execution of the republic scientific and technological program for the development and introduction of a new technology for obtaining high-quality drinking water in the 13th 5-year-plan.

The current status of the republic land reserve causes deep concern. Our farming was extensively developed for a prolonged period, in many location without consideration for agro-ecological demands.

In particular, many miscalculations are permitted in the design, construction, and utilization of irrigation systems. Taking into account the effects of other water factors, this led to the flooding of almost 50,000 hectares of arable land. Such a situation is the consequence of an extremely irresponsible attitude toward conservation of earth's resources.

What, in our view, should be done to improve the protection of land resources?

First of all, a soil-protection, contoured-land system of farming should be inculcated in all lands subject to the danger of erosion. Last year, the UkSSR Council of Ministers Presidium considered the Concept of farming development until 2005, which stipulates the introduction of this system over an area of more than 10 million hectares of arable land, with 3 million hectares during the 13th 5-year-plan.

Secondly, the application is planned in all farms of an integrated system of vegetation defense which will be based upon a skillful combination of agro-equipment, organizational-management, biological, and chemical resources. The issue of pesticide use is especially urgent. In their day, they attracted us with their ease and accessibility of application, their rapid and effective deadly action on pests and weeds. Yet far from everyone understood that these poisonous chemicals were at the same time hazardous to humans as well.

Science must find a way out here. On the order of the republic Council of Ministers UkSSR Agroprom, the scientific institutions of the Southern Division of VASKhNIL [All-Union Academy of Agricultural Sciences imeni Lenin], and the UkSSR Academy of Sciences are now working on the creation of disease- and pest-resistant species and hybrids. We must also take up seriously the development and introduction of new-generation ecologically safe pesticides, and efficacious methods of their utilization. This will allow for a decrease in the pesticide load on the environment.

We have already been convinced that for the time being, there is no getting around the use of chemicals. Yet the unconditional observance of environmental protection and sanitation norms, and a balanced correlation of

nutritive substances should be achieved in the application of chemicals. It is necessary to completely reject the application of poisonous chemicals to those areas designated to yield produce for children's nutrition.

Thirdly, the policy regarding watering systems must be examined in every oblast. Efforts here should be concentrated primarily upon the reconstruction of obsolete irrigation systems. By the next 5-year plan, we must triple the volume of work for the renewal of irrigation systems. The complete re-equipment of the collection-drainage network and the reconstruction of the drying systems needing this is slated for completion.

The fourth thing. The volume of recultivated lands must be increased significantly, with bringing them up to the level of their continuous cultivation. For this, it is necessary in the coming years to recultivate not less than 185,000 hectares of the land in agricultural use in order that the entire land utilization system in industry take a soil-protection, environmental protection direction.

And finally, a reduction of the withdrawal of productive lands from non-agricultural needs, for warehousing of production wastes and sludge storage will become a great reserve. There is one route here—under the conditions of a reduction of the wastes of mineral resources, it is necessary not so much to increase their yield as to achieve more complete and comprehensive utilization. And this will significantly reduce the quantity of wastes whose storage also requires land. Approximately 9 billion metric tons of these wastes have accumulated, occupying an area of over 100,000 hectares. In the dumps are insufficiently extracted rocks, various types of clay and slate.

Can this be a normal situation when the construction people complain about the shortage of gravel and sand, while at the same time, a substantial portion of them may be replaced by raw material from the dumps? In order to correct the situation, the obispolkoms, together with the the ministries and departments, must rapidly create on their basis inter-branch enterprises for the production of the necessary construction materials.

The provision of the necessary stanitation status of the forests is on the agenda. For this, it is necessary to expand the application of their biological means of defense, and substantially increase the area of the republic's nature reserve fund. It is necessary for the appropriate ministries and departments to take more effective measures for the preservation of reserves, national nature parks, and other reserved territories.

The resolution of the problems of development of our resorts, and creating conditions for workers' recreation and treatment are taking on exceptionally important significance. In the near future, it is planned to develop the inventory of sites for popular recreation, to review the classification of resort areas, and to stipulate the priority development of those branches which ensure the social progress of the resort regions, aimed at restoring the strength and health of the workers.

Comrade deputies! In summing up what has been said, I want to emphasize that the government considers the fundamental trend of the work for the improvement of the environment and the increase of people's ecological safety in the short term to be:

- implementing an ecologically based strategy for the development of the economy, its further structural re-orientation toward the accelerated development of the processing, food, and light industries, the expansion of consumer goods production, and the improvement of the people's welfare on this basis;
- limiting construction of new resource- and water-intensive and power-intensive enterprises;
- implementing reconstruction and technological re-tooling of ecologically hazardous enterprises of heavy industry thought the application of low-waste and non-waste producing technologies;
- increasing the volume of reserve for construction of environmental protection facilities and treatments plants;
- improving republic land funds through wide introduction of soil protection and contour-land reclamation systems;
- comprehensively developing the advanced trends in genetics, biotechnology, and biological means of plant defense as a basis for reducing the pesticide load on the environment and raising the efficiency of agricultural production;
- raising the qualifications of specialists in the production and management sphere, and of labor and production discipline in all sectors, and the responsibility of each individual for the matter entrusted to him.

Like the majority of the measures I reported, the realization of the basic trends of activity for improving the state of the ecology indicated is foreseen by the draft Ukrainian SSR State program for environmental protection and rational utilization of natural resources for the 13th 5-year-plan and through the year 2005.

According to preliminary data, the execution of the tasks of the indicated program will cost R20 billion by 2000 alone. And it must be borne in mind that a significant portion of these major resources should be sought in the republic budget under the specific conditions of self-management and self-financing.

The UkSSR Council of Ministers feels that the local soviets of people's deputies, enterprises, organizations, kolkhozes, sovkhozes, and every labor collective must be involved in the financial and material-technical resources in the implementation of environmental protection measures. Only together, with common efforts can we realize the complicated tasks that we are now planning for the correction of the ecological situation.

III.

Esteemed comrade deputies! For almost 4 years now, the Chernobyl tragedy has been at the center of attention for the world community. Yet it most concerns the peoples of the Ukraine, Belorussia, and Russia upon whose lot the atomic disaster fell directly. No other accident or natural disaster of the 20th century had such a destructive effect on the ecology of an enormous region, on man's life and health.

A great deal has already been said and written about the Chernobyl catastrophe. Nevertheless, the complexity of the problem requires me to single it out and report in more detail about the state of affairs today and our actions for the future. I will briefly remind you of the main things that have been done here.

At the first stage immediately after the accident, the task was to save and protect people who had been subjected to radiation effects. For this purpose, almost 93,000 people were relocated from the hazardous zones in a very short period.

Secondly. Obviously, not everyone knew then how urgently would arise the issue of the radiation protection of the population of Kiev. As a direct participant in the elimination of the accident's effects from the first days, I can state with confidence that this was one of the chief tasks at the regular stage of elimination work. The life and safety of the population of a multi-millioned city depended upon it.

Above all, it was necessary to minimize contamination by radioactive dust. For this purpose, dust pressurization was widely used on the roads, and almost all transit automotive transportation had to be taken beyond the boundaries of Kiev. Use of water routes for freight transportation was maximized, starting at Pripyat.

Thirdly. Scientists predicted a possible radioactive contamination of the Dnepr. There was no way that this could be allowed; after all, 35 million people use water from its basin. Water protection works were implemented on an enormous scale (levees, borings, silt-retention dams, etc.). All cities situated along the Dnepr were switched to supply from underground sources. The realization of an entire range of measures allowed us to protect our main water artery, and Dnepr water contamination by radionuclides did not exceed permissible norms even in the most dangerous period after the accident.

Even in earliest days, a number of issues were resolved concerning the organization of medical services and monitoring the state of the population's health, especially children's health. In 1986 alone, 526,000 schoolchildren and mothers with children were transported in an organized manner to other oblasts for recovery.

After the execution of a range of the most urgent jobs, the republic program for the elimination of the effects of the accident was developed for 1987-1989. A great volume

of work was conducted for stabilizing the radiation situation, protecting people's health, and creating for them the appropriate living and working conditions. Approximately 11,000 farm-type houses and 25 multi-unit buildings have been built for the population evacuated; over 600 social and service facilities have been built, and 350 kilometers of gas lines have been extended.

With the participation of oblasts, a range of measures for the purpose of creating the necessary living and activity conditions in the settled points located in the zone of the Chernobyl AES effects has been implemented. Some 114 social-cultural and service facilities have been built in 29 such points. Natural gas has been brought to over 10,000 residential dwellings; 163 kilometers of water pipes, 180 kilometers of vehicular roads, and 440 kilometers of gas distribution lines have been constructed.

I remind the deputies that the work for eliminating the accident's consequences has cost the state today R8 billion. To that should be added another R860 million in debts written off by the kolkhozes and sovkhozes located in the regions that suffered from the accident.

It must be stated that over the course of the entire period since the accident, and especially now, in various circles the discussion of the advisability and basis of the decisions adopted at the first stages of the elimination of its effects has not ceased. The interest in this problem is understandable. However, in my opinion, the evaluation of those events is frequently made from today's positions, across the gap from the overall circumstances existing at the scene and surrounding the accident.

It is also necessary to take into consideration that fact that neither we nor anyone abroad had not known a tragedy on such a scale, and for various reasons were unprepared for it in many ways. There were not enough individual means of protection, reliable tools for measuring radioactive contamination, as a result of which the information on the state of affairs was incomplete. This, of course, affected the efficacy of individual measures to a certain extent.

I will cite only one example. On the scientists' recommendation, we set great hope in conducting decontamination work in those settled points where the radiation level was somewhat lower than the maximum permissible norms. Radiation treatment work was conducted here on a large scale. The range of measures implemented and their efficacy yielded grounds for counting on a significant improvement of the radiation situation. Nevertheless, as time has shown, in certain regions this did not occur, and it was decided by the government to resettle people from individual settled points.

The deputies know that more than a little has already been done to overcome the Chernobyl disaster. However, the situation in the regions of ecological catastrophe remains tense and causes the government's particular concern. In view of this, I want to report on what

is now being done to improve the fate of those people who have suffered from the accident.

In December 1989 the UkSSR Council of Ministers and the Ukrainian trade unions adopted a resolution on improving the living conditions and health maintenance of the population of the contaminated regions. It is in effect across 1,095 settled points in which dwell about one million people.

A decision was adopted on the resettlement and relocation in 1990-1991 of residents of settled points from which the government stipulates complete evacuation. Mothers with children will be resettled in the current year.

The residents of 14 settled points of Zhitomir and Kiev oblasts will move to new residences in 1990, and there will be a partial move from the rayon centers of Narodichi and Polesskoye—approximately 3,000 families, primarily those with children and pregnant women.

The UkSSR Council of Ministers has just adopted a resolution obligating the republic's oblastpolkoms to reserve 800 apartments in buildings finished in 1990 for the account of central state capital investments, to be granted to the families resettling from city-type villages of Polesskoye, Kiev Oblast, and Narodichi, Zhitomir Oblast.

The implementation of a program of works for the organization of necessary medical services and health monitoring is envisaged for those people who were in the accident's danger zones. I will enumerate only the main things that have already been done or are being done.

1. There has been created in the republic the All-Union Scientific Center for Radiation Medicine, comprising three institutes, with a modern diagnostic subdivision and a clinical base. The center offers consultative and medical assistance to those who suffered radiation during the elimination of the accident's effects, were evacuated, or are living in the controlled territory. The center is entrusted with the resolution of issues of coordinating scientific, preventive, and medical research on the problems of radiation medicine.

2. The Ukrainian Specialized Dispensary for the Population's Radiation Defense has been created; it carries out observations of people who suffered in the accident, children first and foremost. On the basis of the dispensary's data a register of the state of health is kept, containing information on over 300,000.

You all know of 22 rayons under special monitoring, which are given priority for medications, diagnostic, and dosimetric equipment, and ambulance services. A mobile diagnostic unit recently began to function in Ovruch.

3. The Republic Regional Center for Maternal and Child Health Maintenance has been organized on the basis of the clinic No. 2 of the former 4th Main Administration of the UkSSR the Ministry of Health in Kiev; it conducts

research and treatment of mothers and children from Kiev, Zhitomir, and Chernigov oblasts, and the city of Kiev.

4. An extension of annual, as well as pre- and post-partum leaves, and a doubling of the financial assistance to children in low-income families are planned.

5. The decision has been adopted to annually allocate almost 83,000 summer-season passes for sanatoria-resort facilities for parents with children and pregnant women living in the regions subjected to radioactive contamination or evacuated from them.

According to the decision of the UkSSR Council of Ministers, the children's sanatorium "Smena" in Yevpatoriya, "Ukraina" in Gagra, and "Chernomorskiy" under construction in Yalta have been transferred away from the former 4th Main Administration of the UkSSR to the Ministry of Health for the treatment of these people.

6. Free maintenance of children in preschool facilities, board for schoolchildren, and the allocation of financial compensation for families subject to resettlement are specified. The issues associated with their priority delivery of housing and employment have been resolved.

What is planned for the long term?

The UkSSR Council of Ministers, with the participation of the Kiev, Zhitomir, Chernigov, Rovno, and Cherkassy oblasts, the republic ministries, departments, and scientific has developed a draft of the Comprehensive Program for the Elimination of the Accident's Effects until the year 2000.

This document defines the practical problems in the creation of conditions for the population's safe life activity in all the controlled regions. It is planned, in particular, to strengthen the material-technical base of health facilities, to build for this purpose hospitals, ambulatory clinical facilities, midwifery-obstetric centers, sanatoria, rooming houses, physical culture sites, and the such like. The allocation of R672 million for these purposes alone is planned.

One of the main problems is the improvement of nutrition in the regions which suffered from the accident, particularly children's nutrition. A substantial expansion of the network of enterprises of trade and public nutrition is planned under the program. Resources have already been allocated for the purchase of imported equipment with a 15 metric ton per shift capacity to produce children's dairy products. It will be installed at the fourth dairy plant in Kiev. Using equipment purchased abroad, the construction of a canned milk combine for the production of children's dairy and cultured milk products is planned in the city of Khorol, Poltava Oblast.

During the Ukrainian delegation's stay in Bavaria, we held preliminary negotiations on the organization of a joint venture for the production of meat-vegetable preserves for children. The issue of purchasing two lines for

producing sterilized milk for priority distribution to the population of the regions that suffered from the accident is now being resolved.

We feel that with the implementation of these plans, in 1993 we will fully meet our requirements for children's nutrition products. The main thing now is labor and a high level of responsibility for the execution of what has been planned.

For the recovery of economic conditions and the improvement of the quality of agricultural production in the current year, work on land with a high level of contamination in the regions indicated will be halted; dairy herds will be removed from these zones. It is planned that the farms located here will be reprofiled.

Measures are also specified for the scientific provision of the program. This work is now headed by the Republic Interbranch Coordinating Center under the UkSSR Academy of Sciences. More than 40 scientific institutions of the republic and country have been involved in conducting the research.

I would like to request of the scientists of the Academy of Sciences, the republic Ministry of Health, and the Southern Division of VASKhNIL directly concerned with this problem that in addition to executing the basic scientific developments, they give the population functional information and everyday recommendations. Qualified specialists well informed of the state of affairs must speak to the population more frequently.

I feel that through this we will eliminate many of the questions the population has, and will predict in time any sort of sensationalism that may arise. After all, it is such lack of information and uninformedness* generate groundless fear and rumors.

The execution of the entire volume of the tasks specified by the Comprehensive Program will require approximately R15 billion, including almost R7 billion for the 13th 5-year-plan. The development and agreement with this plan is now being completed. We are reckoning upon the union government supporting our proposals.

I want to assure the deputies that the republic Council of Ministers will in the future continue to hold the Chernobyl problem at the center of attention, and will seek additional opportunities for the speediest possible resolution.

Comrade deputies! In connection with the discussion of this issue, allow me to speak briefly on the development of nuclear power in the republic in the future. Our positions are clear—we stand for the minimum number of nuclear reactors in the Ukrainian land. Proceeding specifically from this, and relying upon the broad support of the public and scientists, the UkSSR Council of Ministers in conjunction with the Ukrainian CP Central Committee has already attained the limitation of development of nuclear power in the republic.

Apart from this remains the issue of the further operations of the Chernobyl AES. What is the main complication here? Before halting the work of its nuclear reactors, scientists and operators are faced with resolving an entire range of complex scientific and technical problems associated with this process. There is nothing analogous to this in world practice. Secondly, we must make a reliable balance of electric power in the republic, having envisaged in it the future development of our national economy, and in particular, that of Kiev. We must also take into consideration the growing requirements of the population.

On the basis of what has been said, the UkSSR Council of Ministers feels it advisable to entrust the UkSSR Academy of Sciences, UkSSR Gosplan, and UkSSR Minenergo [Ministry of Power and Electricity], involving the country's appropriate scientific institutions, with the development of a special program for taking the Chernobyl AES out of operation. It is necessary in this program to establish the stages and sequential priority of the resolution of the problems indicated, the material-technological and financial resources necessary, and to specify the superintendent of the work.

I will add one more thing. In limiting the development of nuclear power, we must all recognize that for the improvement of life and the people's welfare, we must substantially increase the power supply both in production and in our daily lives. Here the republic still lags far behind the level of industrially developed countries. This situation may be corrected only at the cost of increasing production and consumption of electric power.

In light of this, I feel that we should consider the draft of the republic Power Engineering Program all the sooner, especially those trends which concern the comprehensive energy savings, the opportunities for further development of thermal power engineering, and the utilization of alternative sources of energy.

Here our scientists, power engineers, and physicists are faced with great tasks. They must propose such scientific solutions and developments whose introduction even under limited development of nuclear power would not lead to a reduction in the level of meeting all the requirements of electric power.

IV.

Comrade deputies! The perestroika of the economic mechanism, the creation of the structure and conditions for local self-management on the basis of economic accountability which is now taking place in our republic demand radical changes in the construction and principles of the activity of all organs of the environmental protection system. Certain things are already being done here in the organizational plan. The reorganization on a new operational basis of the UkSSR State Committee for Environmental Protection [Goskompriroda] was recently implemented. Corresponding structures were formed on the oblast, city, and rayon level.

A department of the ecology has been created in the government apparatus; a UkSSR Council of Ministers commission is constantly working on extraordinary situations. In a number of oblasts, the post of obispolkom deputy chairman directly concerned with issues of the Chernobyl accident has been created.

The task of changes in the economy of nature utilization is posed as a priority under the new conditions. All measures for the introduction of the economic mechanism into this sphere must be precisely bound to radical economic reform, to the principles of expansion of the rights of industrial enterprises, local soviets of people's deputies, and the republic soviet on the whole.

For this purpose, the results of the economic experiment now being conducted in certain cities and oblasts should be more fully exploited. The fundamental norms of the maximal permissible discharge of hazardous substances into the atmosphere and water should be developed already this year, so that starting with 1991, the mechanism of compensating the damage done to nature as the result of economic activity may be introduced.

The key ecological-economic factors being developed must be tested by regions.

As its final goal, all this work must be aimed at the combination of interests of the economy and the ecology, and a significant improvement of matters of nature utilization. It is necessary to create such a mechanism so that damage to the environment and irrational utilization of natural resources would be economically disadvantageous to enterprises.

This undoubtedly requires a significant improvement in the environmental protection legislation, the elimination of the spheres of lawlessness still in existence. That is why it would be expedient to charge the new government with developing and introducing for the consideration of the UkSSR Supreme Soviet the Ukrainian SSR draft law on environmental protection.

The preparation should also be specified of draft laws on specially reserved nature territories, on the conservation and rational utilization of flora. It is necessary to begin a review of the water and forest codes, and to make changes and supplements to legislative acts on health care, the atmosphere, etc.

The work of the republic sanitary-epidemiological service must be radically improved, and the development of the basis of the sanitary legislation and the draft law on state sanitary supervision be accelerated. All sanitary-anti-epidemiological measures must be aimed not only at punishing law violators, but primarily at promoting the prevention of environmental pollution.

The government feels that environmental protection procuracies should be created in the most ecologically hazardous regions of the republic to supervise legality in the sphere of environmental protection and utilization of

natural resources; these have acquitted themselves well in the Azov-Black Sea region.

Here I must accentuate the fact that the intensification of everybody's responsibility for observing the requirements of ecological laws requires a major improvement of ecological information, its applicability, its broad accessibility, and reliability. And the government will fully support this. Without such information, it is practically impossible to implement a restructuring of the economy on an ecological basis. Nor is progress in general possible without this.

The role and importance of science in the resolution of ecological problems is growing incredibly. I have already spoken about this. I would only add that scientists from our Academy of Sciences, the Ministry of higher education, and branch institutions must accelerate the development and introduction of low-waste and non-waste producing technologies, effective methods of water and air treatment, and environmental protection equipment.

Envisaged for these purposes is the development and implementation in the 13th 5-year-plan of a number of science and technology programs geared toward improving the ecological situation.

The problem of ensuring the ecological purity of agricultural production remains quite topical. It is necessary for academic and agricultural science, together with medicine, to develop within the shortest possible time frame a range of hygienic norms, rules, and technologies to prevent the negative effects of mineral fertilizers, pesticides, and other chemical substances on food products.

Before our scientific workers and producers is the task of developing an automated republic system of monitoring of the ecological situation whose constituent parts must comprise the systems of regional and branch ecological monitoring. Here we must more effectively utilize the potential of the defense branches. We put great hope in the special program "The Conversion—to the Ecology."

Comrades! Ecological changes, and, I think, sometimes catastrophes as well, have convinced us of the fact that the ecology is an international concept. Today, the resolution of global ecological problems requires a unification of efforts, and the Ukraine's close cooperation with foreign countries and international organizations.

This is exactly what was discussed at the Ukrainian delegation's negotiations in Bavaria. The West German side showed great interest in such cooperation and introduced a proposal to hold a scientific symposium in the Ukraine this year. We were offered valuable equipment and modern measuring apparatus which will be used to monitor the environment in the most ecologically hazardous regions.

The appropriate ministries and departments should develop programs for the execution of the responsibilities adopted by the republic for the ratification of international accords on environmental protection issues. The

most important thing is to ensure the more complete exploitation of international experience and cooperation for the improvement of the ecological situation, and the acceleration of production's transition to resource-conserving and non-waste producing technologies.

The recently growing public concern for the environment was conditioned by the emergence in the republic of dozens of ecological associations, groups, clubs, and centers of various profiles. Thus, the "Zeleniy Svit" ecological association, the committee to save the Dnepr and small rivers, and the committee to save the Sea of Azov have recently been organizationally registered. Public committee on the problems of the Danube, the Dnester, and the Southern Bug, and the Khortitsy islands also exist. In a number of oblasts, there are already examples of productive joint work of local soviets of people's deputies, scientific institutions, and the mass information media with the society for nature conservation and other ecological associations.

The republic government is convinced that the active public movement, suffused with concern for the recovery of the environment and directed towards advocating ecological demands is a noble, patriotic cause. The local soviets of people's deputies are obliged to offer them the necessary support, and to consolidate the public's efforts for joint work. On this score, I only wish to emphasize that to assist does not just mean sounding the alarm in case of disaster, just resorting to loud slogans and appeals. Today, joint painstaking work, a unity of actions, and concrete results of the work in ensuring the reliable conservation of our natural resources are necessary.

It can be stated without exaggeration that all further activity in radical perestroika of the cause of environmental protection is simply impossible without all society's profound concern with this, without the ecologization of all our thinking, without a substantial increase in the level of ecological expertise.

Every person's conscientious, caring attitude toward nature must be formed in childhood, within the family, in school, in educational institutions, and directly on the production line. The activity of all indoctrinational and educational organs, the mass information media, literature, and the arts must be directed toward this.

The entire environmental protection system is in urgent need of supplementary personnel, of perestroika in the sphere of training highly qualified ecological specialists. Here the UkrSSR Academy of Sciences, the Ministry of higher education, and the Ministry of Public Education are faced with great tasks. It is necessary to expand significantly the network of ecological courses of personnel retraining, and the internship of prospective scientific staffers in VUZs, institutes, and foreign ecological centers.

Esteemed comrade deputies!

The government has reported to you the fundamental measures which we must implement in the near future in order to radically improve the ecological situation in the

republic, and halt backsliding to an unacceptable level in its individual regions. Their realization demands great means and substantial material resources. According to preliminary calculations, we will need R45-50 billion along with the expenses specified for the elimination of the effects of the Chernobyl AES accident. The utilization of these funds is not a simple task. Everyone must take up its solution together, for it can be executed only through joint efforts and joint labor. Yet seeking these means is even more complicated.

That is why it is necessary to introduce the priority tasks of the planned regional programs into the plans of the ministries, departments, enterprises, organizations, kolkhozes, and sovkhozes now being developed, as well as the State Plan for the republic's socioeconomic development in the 13th 5-year-plan. In light of this, today we would like to listen to the deputies' proposals for the development of the republic's national economy in the short term, and the growth of its economic potential with consideration for the existing ecological situation.

I am convinced that during the process of discussing the report, the deputies will introduce their additions and comments, which will more fully reveal this important and very complex problem, in addition to supplementing UkSSR Supreme Soviet draft decree presented for your consideration.

The government is certain that the implementation of the measures specified in the draft, as well as of those which will be supplementally undertaken by local soviets and economic organs will enable the normalization, and in the long run, even improve the ecological situation in various regions and in the republic as a whole.

Comrade deputies! What our land, our rivers, forests, and air will be like depends upon each of us individually and all of us together. Let us do everything incumbent upon us with mutual efforts and concrete matters in order that the rich, unique nature of the Ukraine be better tomorrow than it is today.

Ukrainian Supreme Soviet Decree on Accountability for Ecological Damages

*90US0560A Kiev PRAVDA UKRAINY in Russian
21 Jan 90 p 3*

[Decree of the Presidium of the UkSSR Supreme Soviet: "On Accountability for Violating the Requirements for Improving the Ecological Environment in the Ukrainian SSR"]

[Text] With the goal of creating the necessary conditions for improving the ecological environment in the republic, the matter of safeguarding the health of the population, and keeping it informed as to the state of its surrounding milieu, and taking into consideration the suggestions of the laboring and scientific public on this issue, the Presidium of the UkSSR Supreme Soviet resolves:

1. To establish that information about the ecological, including the radiation, situation in the UkSSR, which is

related to the pollution of the earth, water resources, atmospheric air, and food products and has a negative impact on the health of people and the plant and animal world, as well as about the morbidity rate in rayons with elevated ecological danger, is subject to mandatory circulation. The organs empowered with state control for the protection and exploitation of natural resources and the health care organs are required to publish the above-cited information in republic and oblast newspapers and to broadcast them over radio and television. The procedure and schedule for circulating this information is to be determined by the UkSSR Soviet of Ministers.

2. Concealment or intentional distortion by public servants of information about the state of the ecological, including the radiation, environment, which is related to the pollution of the earth, water resources, atmospheric air, and food products and has a negative impact on the health of humans and the plant and animal world, as well as about the morbidity rate in rayons with elevated ecological danger shall be punished by correctional labor for a term of up to one year or by a fine in the amount of between one hundred and four hundred rubles. The same action committed repeatedly or causing significant harm to human health or entailing other grave consequences shall be punished by deprivation of freedom for up to three years or correctional labor for a term of between one and two years, with the deprivation of the right to hold certain positions for a period of up to three years.

3. To establish that violating the requirements of radiation safety procedures in a specially demarcated zone of radiation pollution, as by penetrating this zone without permission from the appropriate organs or unauthorized settlement in it, or the destroying, damaging, or moving signs of radiation pollution or obstructing the indicated zone, or carrying or hauling out of it without the proper authorization building materials, fruits, berries, mushrooms, other food products, household goods or other objects shall entail a fine against citizens in the amount of between thirty and fifty rubles with confiscation of said objects and against public servants of between fifty and one hundred rubles. Objects taken out of this zone by public servants are subject to removal. Objects confiscated and removed in accordance with the present Decree are to be destroyed in the established procedure. The protocols regarding the violations envisaged by the present article shall be compiled by the appropriate public servants in the organs of internal affairs. Cases of the indicated legal violations are to be examined by people's judges of the rayon (city) people's courts. Upon the pronouncement of the resolution on imposing administrative penalties for unauthorized settlement in a specially demarcated zone of radiation pollution, the judge shall require the violator to leave that zone. The procedure for implementing this requirement shall be determined by the UkSSR Ministry of Internal Affairs in conjunction with the UkSSR Ministry of Justice.

4. The production, procurement, or sale of agricultural products containing means for protecting plants, for

stimulating their growth, mineral fertilizers, and other chemical preparations in excess of the maximally permitted level of concentration shall entail the imposition of a fine against citizens in the amount of up to fifty rubles and against public servants of up to one hundred rubles. The protocols regarding the indicated legal violations shall be compiled by the appropriately empowered public servants in the organs of state health care and veterinary oversight. Cases of the legal violations envisaged by the president article are to be examined by administrative commissions under the executive committees of the rayon, city, and city rayon soviets of people's deputies. Agricultural production in the instances envisaged by the present article, should it be impossible to utilize it for feeding livestock or other goals, shall be subject to unrecompensed removal from the sovkhozes, kolkhozes, other state and cooperative enterprises and organizations and from citizens and its subsequent destruction in the established procedure.

5. In this connection to introduce changes and additions to the following legislative acts of the UkSSR:

1) In the UkSSR Criminal Code: to add the following content to article 227: "Article 227. Concealment or distortion of information on the status of the ecological environment or the morbidity rate among the population. Concealment or intentional distortion by public servants of information about the state of the ecological, including the radiation, environment, which is related to the pollution of the earth, water resources, atmospheric air, and food products and has a negative impact on the health of people and the plant and animal world, as well as about the morbidity rate in rayons with elevated ecological danger is to be punished by correctional labor for a term of up to one year or by a fine in the amount of between one hundred and four hundred rubles. The same action committed repeatedly or causing significant harm to human health or entailing other grave consequences is to be punished by deprivation of freedom for up to three years or correctional labor for a term of between one and two years, with the deprivation of the right to hold certain positions for a period of up to three years";

2) in the UkSSR Criminal-Trial Code: in the first part of article 112 to replace the numbers "226-228" with the numbers "226, 227, 227, 228";

3) in the UkSSR Code for administrative legal violations (Gazette of the UkSSR Supreme Soviet, 1984, supplement to no. 51, art. 1122; 1985, no. 24, art. 553, no. 44, art. 1056; 1986, no. 15, art. 326, no. 27, art. 539, no. 52, art. 1057; 1987, no. 12, art. 226, no. 25, arts. 453, 454, no. 35, art. 674, no. 49, art. 1009; 1988, no. 33, art. 808, no. 52, art. 1184; 1989, no. 19, art. 182, no. 22, art. 236):

a) to supplement the Code with articles 42 and 46 of the following content: "Article 42. The production, procurement, or sale of agricultural products containing chemical preparations in excess of the maximally allowed levels of concentration. The production, procurement, or

sale of agricultural products containing means for protecting plants, for stimulating their growth, mineral fertilizers, and other chemical preparations in excess of the maximally permitted level of concentration shall entail the imposition of a fine against citizens in the amount of up to fifty rubles and against public servants of up to one hundred rubles"; "Article 46. Violation of the requirements of radiation safety procedures in a specially demarcated zone of radiation pollution. Violation of the requirements of radiation safety procedures in a specially demarcated zone of radiation pollution as by penetrating this zone without permission by the appropriate organs or unauthorized settlement in it, or destroying, damaging, or moving signs of radiation pollution or obstructing the indicated zone, or carrying or hauling out of it without the proper authorization building materials, fruits, berries, mushrooms, other food products, household goods or other objects shall entail a fine against citizens in the amount of between thirty and fifty rubles with confiscation of those objects and against public servants of between fifty and one hundred rubles";

b) in part one of article 218 the word and number "article 45" shall be replaced with the word and numbers "articles 42, 45";

c) in article 221, part two of article 277, and part one of article 294, the word and number "articles 51" shall be replaced with the word and numbers "articles 46, 51";

d) in part one of article 255: in paragraph two of point 1 the word and number "article 49" shall be replaced with the word and numbers "articles 46, 49"; to supplement point 1 with paragraphs of the following content: "Organs of state health oversight (article 42); organs of state veterinary oversight (article 42)";

e) in paragraph two of point 2 of article 313, the word and number "articles 162" shall be replaced with the word and numbers "articles 46, 162."

Signed V. Shevchenko, Chairman of the Presidium of the UkSSR Supreme Soviet N. Khomenko, Secretary of the Presidium of the UkSSR Supreme Soviet Kiev, 19 January 1990

Foreign Experts To Assess Chernobyl Effects

90UN1617A Kiev PRAVDA UKRAINY
in Russian 29 Mar 90 p 3

[Article by RATAU correspondent A. Trotsenko: "Chernobyl: New Approaches to Assessing the Consequences of the Nuclear Power Station Accident Are Necessary"]

[Text] At the invitation of the USSR Government, an international group of experts has arrived in our country in order to discuss a plan for conducting an expert study of whether people can safely reside in areas contaminated as a result of the accident at the Chernobyl AES [Nuclear Power Station]. It is headed by Assistant to IAEA [International Atomic Energy Agency] Deputy

General Director, Director of the Department of Nuclear Safety Morris Rosen. The delegation includes representatives of authoritative international organizations—the Commission of European Communities (CEC), Food and Agriculture Organization (FAO), World Health Organization (WHO), International Atomic Energy Agency (IAEA), as well as leading specialists from Austria, England, the United States, and Japan. The group of experts visited the Ukraine between 25 and 27 March.

The guests had a meeting at the Ukrainian SSR [Soviet Socialist Republic] Council of Ministers. K.I. Masik, deputy chairman of the republic Council of Ministers, familiarized them with the progress of work to eliminate the consequences of the accident at the Chernobyl AES in the Ukraine. Among other things, it was stressed that in the years since the catastrophe more than 90,000 people have been resettled from the affected rayons. This work is still under way. In the uncontaminated zone, 14 new villages are under construction. About 15,000 people will be resettled to them from Polesskiy and Narodichskiy Rayons as early as this year. Measures which made it possible to reduce the level of radiation by factors of between two and four in the affected areas were also discussed, as well as changing the production mix of agriculture. Other issues related to improving the living conditions and medical services to the population of these regions were also touched upon.

At the same time, it was noted that 1,450,000 people still reside in the zones affected by the AES accident. There are 5 million hectares of land contaminated by radiation in the republic, including 3.5 million hectares of agricultural land and 1.5 million hectares of forests. The Ukrainian SSR government, scientists and specialists, as well as the general public, question the 35-rem concept which was developed in its time by the USSR Academy of Medical Sciences and the USSR Ministry of Health. We badly need a real concept which guarantees the safety of the people.

The deputy chairman of the Ukrainian SSR Council of Ministers expressed his confidence that the work of these highly competent foreign experts would be helpful in successfully solving problems associated with the Chernobyl misfortune.

The head of the group said that their work will consist of several stages and will take three to four months. At the first stage, which the current trip inaugurates, the tasks which the group is to accomplish will be determined. At the second stage, an international consultative committee will be set up. It will assume responsibility for observing the conduct of work. The well-known Japanese scientist, Shigomatsu, is expected to be appointed director. The third stage, in the course of which a chronology of all events which have occurred as a result of the Chernobyl accident is expected to be compiled, will be the most significant one. This will include work on establishing the clinical influence of nuclear radiation on human health, evaluation of the data collected by

Soviet specialists, and their comparison with those of their foreign colleagues. A final report will be drawn up on the basis of the work done. This document will be submitted to the USSR Government, as well as to an international commission. As the head of the delegation sees it, it should also be published in the press.

Summing up the conversation, Morris Rosen said: "Our main goal is to determine what the exposure of the population to radiation was and to establish the health status of the populace at present. Only such an approach will make it possible to work out the measures whose implementation will ensure the safe residence of people in some of the regions affected by radiation."

Yu.N. Spizhenko, Ukrainian SSR minister of health, V.G. Baryakhtar, vice president of the Ukrainian SSR Academy of Sciences, Yu.N. Shcherbak, chairman of the "Zeleniy Svit" Association, and others took part in the conversation.

Foreign experts visited the USSR Academy of Medical Sciences All-Union Research Center for Radiation Medicine and traveled to Polesskoye in Kiev Oblast. They visited a local hospital, an agricultural center, and met with the representatives of the public.

Despite the intensive program of their visit to the republic, foreign experts could not refuse to meet with the representatives of "Zeleniy Svit." A meeting which lasted several hours was held in the evening in the Ukrainian SSR Ministry of Health.

The familiarization stage of the visit of the group of foreign experts to the Ukraine ended with a trip to the city of Ovruch in Zhitomir Oblast. The group will continue its work in Belorussia.

Specialist Comments on Chernobyl Aftermath

PM2604102190 Moscow *IZVESTIYA* in Russian
25 Apr 90 Morning Edition pp 1, 6

[Interview with I. Kambulov, leading specialist with the USSR Council of Ministers State Commission for Emergency Situations, by A. Illesh: "After the Disaster of the Century"—no place or date of interview given; first four paragraphs are an introduction]

[Text] Chernobyl is no occasion for festive jubilee celebrations. This event does not recede into history, it is always with us. The pain, alarm, and problems caused by the most major disaster of the 20th century tangibly affect our entire life—politics, the economy, morality.

The 120,000 evacuees (and additional evacuations are scheduled), more than 600,000 "liquidators," 3 million

people now living on territories contaminated by radiation (including more than 700,000 children)—all this, no matter how paradoxical it may sound, is part of our everyday life....

Our shared grief is four years old. IZVESTIYA did not lose sight of it for a single month. Now the country's Supreme Soviet will begin discussing a single global program to liquidate the consequences of the 20th century's largest disaster. A series of important state documents have already been adopted. Ministries and departments are at long last declassifying data making it possible to take a closer look at the situation prevailing around Chernobyl. The situation is critical.

The USSR Council of Ministers State Commission for Emergency Situations receives information from all organizations involved to some extent or another in the Chernobyl problems. Our conversation, based on readers' letters (which continue to arrive at IZVESTIYA every day) is with I. Kambulov, leading specialist with the commission.

[Illesh] Igor Nikolayevich, you personally have spent quite a long time in the zone, where, of course, you had occasion to meet people whose health has been damaged as a result of work to liquidate the accident's consequences. Virtually one in two Chernobyl letters we receive is a cry for help, a story about a crippled life or ruined health.... At long last the Council of Ministers and the AUCCTU [All-Union Council of Trade Unions] recently adopted a resolution on measures to improve medical services and social security for these people. What are this document's provisions?

[Kambulov] First of all, 1990 will see the introduction of additional medical screening of all workers (including those on temporary assignment or posting) from enterprises and organizations, ministries and departments, state, soviet, and party organs, and public organizations, servicemen from military units and KGB organs, and senior and rank-and-file personnel of internal affairs organs who took part in liquidating the consequences of the Chernobyl AES [nuclear power station] accident within the 30-km zone, and also servicemen of the reserve who were especially called up to perform work associated with the liquidation of this accident's consequences, regardless of where they were posted or the nature of the work they did. These people must be guaranteed constant outpatient observation and, whenever necessary, hospitalization of those who are found to be sick, as well as priority service in preventive treatment and pharmacy institutions.

It is also planned to use the facilities of a series of leading medical institutions in the country to set up the required number of rehabilitation centers for participants in the liquidation of the Chernobyl AES accident's consequences.

[Illesh] Frequent mention is made nowadays of a union-wide register, some sort of list to record the names of all who have gone through Chernobyl. How complete is it?

I am not asking out of idle curiosity, I personally know people who spent a long time working in the zone but whose names do not appear on any register. I myself was there during the difficult days, but my name does not appear on any register. At any rate, medical personnel never showed any interest in my health or my colleagues' health....

[Kambulov] I find it difficult to answer on the medical personnel's behalf about the extent to which the currently existing register is correct. But I am aware of the complaints about it. IZVESTIYA has given the number of people who took part in liquidating the accident—about 600,000. It is very important to ensure that every single one of them is listed in the State Register now being compiled on the basis of the All-Union Distributed Register. Ministries and departments have been instructed to clarify their own lists of persons exposed to radiation and pass them over to the Ministry of Health during the first six months of this year. This information should accurately show the dates of work in the zone, the radiation doses, and the results of medical screening. Naturally, it is necessary to especially monitor those who took part in work in the Chernobyl AES zone during the most complex periods in 1986-1987. After all, dosages during the initial months of work were quite high, and you probably remember what dosimetry monitoring was like.

[Illesh] A document was published recently (USSR Council of Ministers and AUCCTU Resolution No. 325), on the basis of which people in Chernobyl can enjoy benefits. We constantly hear it said: The state does not have enough money to implement vitally important programs. What would be the "cost" of this resolution?

[Kambulov] It is hard to give a precise figure for direct costs, since most of the benefits concern the social sphere and will be implemented through different programs, but the estimated amount is not all that large—about R5 million.

[Illesh] Our newspaper once tried to accurately establish where the money from Account No. 904 was spent. Alas, there are plenty of blank spots in this matter. Please help us to work it out and offer accurate accounting—Where? How much? For what purpose?

[Kambulov] Let me resort to Ministry of Finance data.

Account No. 904810 was opened in May 1986. Its full name is "Fund To Help Liquidate the Consequences of the Accident at Chernobyl AES." Between May 1986 and December 1989 it received R543.3 million from citizens, enterprises, organizations, ministries, and departments. An amount of R532.1 million was spent during that period.

The sum of R425 million was channeled into capital investment to build housing and social, everyday, and municipal facilities for those who were resettled away from the danger zone.

A sum of R35.2 million was allocated for the payment of compensation to the population of certain rayons in Kiev, Zhitomir, and Gomel Oblasts in respect of lost property, fruit and berry crops, and uninsured animals. The USSR Ministry of Finance allocated R0.15 million in January 1988 to Soyuzkhimfarmtorg [All-Union Office for Trade in Chemical-Pharmaceutical Goods and Hygiene Requisites] for the acquisition of reagents, and R5.8 million in March 1988 to the Belorussian State Agro-Industrial Committee in respect of condemned meat. Following a court decision, the sum of R5.8 million was returned as having been improperly paid out of voluntary donations....

[Illesh] There have been press reports that a sizable amount of the money collected from the people was put to use by the Ministry of Nuclear Power Generation. Please explain: Who gave permission for this, and where did the money go?

[Kambulov] Indeed, the USSR Ministry of Nuclear Power Generation did receive R65.8 million from this account. The money was paid over by virtue of a decision of the USSR Council of Ministers. This is what it was spent on: Decontamination in the exclusion zone, dust suppression, construction of burial grounds, the setting up of stations for washing down means of transportation, railroad track detours—a total of R4.2 million. Guarding of the evacuation zone—R4.2 million. Building water protection facilities along the Pripyat River, facilities for the decontamination of equipment, and other projects not directly associated with the AES—R35.2 million. Building the "Zelenyy Mys" tour-of-duty settlement for participants in the liquidation of the accident's consequences—R3.2 million. Supplementary payments to the "liquidators" accounted for R13.0 million. A further R6 million went on other expenses associated with operations within the 30-km zone and with the evacuation.

[Illesh] How much money is left in Account No. 904?

[Kambulov] The balance on 1 January was R11.2 million.

[Illesh] The total amount of the state's losses as a result of the accident was given a few years ago as being about R4 billion. It increased somewhat later. What is your present estimate of the losses due to Chernobyl, and how much greater will they be in, say, five years' time?

[Kambulov] The economic losses due to the Chernobyl AES accident and the liquidation of its consequences amounted to R9.2 billion at the end of last year. The USSR Supreme Soviet session is due to examine questions associated with the definition of necessary expenditure and the allocation of funds for the liquidation of the Chernobyl AES accident's consequences in 1991-1995. The amounts will naturally increase after that. They will also increase in subsequent years.

[Illesh] During the first few days following the accident people were extremely short of information—precise

and correct information. At that time the departments involved simply concealed the truth from the people. Can we now be said to have enough information about Chernobyl?

[Kambulov] The mass media today are simply flooded with reports—it would seem that people have learned everything about what happened. The harsh criticism is perfectly justified—it is only a profound awareness of all aspects of the disaster that will make it possible to avoid a repetition of mistakes in the future. Self-purification in our society is the only reliable way out of the blind alley. But here we have a paradox: Newspapers and television are raging and exposing (and this is correct!), while residents in the contaminated rayons lack the elementary knowledge of how they should act and what they should do in specific circumstances....

[Illesh] One last question. The number and size of contaminated areas on the maps showing contamination after the accident increase each year. This, in my view, is indicative not so much of investigative work which "discovers" new contaminated areas, but of gains by glasnost whereby specialists are forced to make public things that formerly were professional secrets. In this context, please assess the danger (or lack thereof?) in the contaminated areas which have appeared on the latest maps in Kursk and Orel Oblasts.

[Kambulov] The existing borders of radioactive contamination of territories remain virtually unchanged—that is my answer to your question. And the package of experimental work and studies carried out by the State Committee for Hydrometeorology, coupled with mathematical modeling of the process of wind directions and movement of radioactive aerosols, indicates: Secondary contamination of localities as a result of these processes is insignificant and cannot lead to the formation of new contamination zones. Specialists have yet to assess the fresh contamination data which were recently published. But I do not think that there is any significant danger.... Nonetheless, the Russian Federation government is now examining the question of additional evacuation of residents from contaminated rayons. Let me make this clear: The question of evacuation is now fully within the powers of republics themselves.

Academician Criticizes Radiation Hazard Guidelines

LD2704180990 Moscow TASS in English 1655 GMT
27 Apr 90

[By TASS correspondent Andrey Surzhanskiy]

[Text] Moscow, 27 April (TASS) When the Chernobyl disaster occurred, Soviet scientists thought they had enough knowledge to control the situation. On the contrary, the effect of even small doses of radiation on people living in the contaminated zone has at times unpredictable consequences, Professor Yelena Burlakova, chairperson of the Scientific Society on Radiobiology of the USSR Academy of Sciences, told TASS.

She said that the incidence of leukemia has recently increased among residents of a number of districts in Belorussia, the Ukraine and Russia to which discharge of the Chernobyl explosion spread.

Burlakova criticised the concept that a lifetime dosage of 33 rem is permissible. This figure served as the basis for permitting people to reside in contaminated areas.

This figure has not taken into account differences in sensibility to radiation due to age or other individual differences. Scientific research over the past four years shows that children are much more sensitive to radiation than adults.

Only consequences of irradiation such as acute or chronic radiation sickness were taken into account when 35 rem was designated as acceptable level. Studies completely ignored the consequences of disturbing the immune system and the increased tendency to develop various diseases, including cancer.

The danger of radiation is aggravated by the fact that its consequences can affect the progeny of persons who were subjected to radiation only once.

Burlakova said the authors of the 35 rem concept did not consider the fact that existing equipment cannot establish if a person received a dosage of 35 rem. In addition they have not considered the scope of radionuclide contamination in many districts, the living conditions of people in contaminated areas and the unsatisfactory medical service.

The increased incidence of disease is connected not only with irradiation as such, but also with ecological and psychological factors.

It is difficult to make any predictions at present. All factors should be considered before drawing conclusions, Professor Burlakova said. Decision-making should be based on the results of scientific research.

Future of Chernobyl-Zone City in Doubt

WA2704191490 Moscow RABOCHAYA TRIBUNA
in Russian 25 Apr 90 p 2

[Article by RABOCHAYA TRIBUNA staff correspondent G. Dolzhenko: "A City Without a Future"]

[Text] A bird's eye view of Slavutich is that of a fairy-tale town. Snow-white candles of high-rises, clusters of cottages with peaked roofs, straight boulevards, and cozy lawns suddenly emerge from the green thicket. Mushrooms and berries grow right underfoot, so one can live and be merry. This is how the architects laid out the city. But life makes revisions, and at times harsh revisions, in the plans of the people who quite recently survived the horrors of Chernobyl. Slavutich is no paradise.

Our conversation took place in the office of V. Zhigallo, acting chairman of the city executive committee. The concerns of local executive committee staffers are the

same as everywhere else: square meters, provision of amenities, social and cultural facilities.... In the last three years, construction workers have almost fulfilled their minimum program: Some 5,500 apartments have been allocated, there are trade centers, a house of consumer services, and a movie theater. To be sure, there are arrears of about 30,000 square meters of housing, and they are having problems completing medical facilities. The Ukrainian SSR [Soviet Socialist Republic] Ministry of Construction points to the USSR Ministry of Atomic Energy and Industry: Supposedly, they have failed to allocate resources to us, and this is why we have not signed a contract. Meanwhile, R36.6 million in state capital investment have been allocated for this year. A school, a day-care center, the House of Culture, and an athletic center have yet to be built. Next year, another stage of erecting a city designed for 30,000 people will begin, whereas at present there are about 20,000 registered residents. This is serious business: 700 employees of the power station are on the waiting list for housing, or one-third of the entire city list.

In general, everything is as it ought to be. However, a certain amount of reticence is felt in conversations. It is in the air, it clouds one's thinking. Should construction proceed? What is this city for anyway? Could it be that it really appeared as in a fairy tale in order to disappear without a trace later? Slavutich turned out to be "located" in the place with the highest radioactive contamination in the entire area, in its very center.

To this day, nobody has been able to explain coherently how this happened. The area has been surveyed many times. In August 1986, a letter signed by S. Burenkov, the then USSR Minister of Health, and Yu. Israel, chairman of the State Committee for Hydrometeorology, arrived at the conclusion that no restrictions on residence exist here, including those for children, and that auxiliary farmsteads may be also be developed. A year later, a repeat letter came, this time signed by new USSR Minister of Health Ye. Chazov and, once again, Yu. Israel confirming that life was possible. Meanwhile, specialists knew from the very beginning about "the dirt"—the ringing [of radiation monitors] has been heard there since the first hours of the accident and to this day.

Strange as it may be, forest rangers rather than nuclear specialists were the first to raise the alarm. They were the ones to encircle the city with gates and warning signs. On their own initiative, the disease control service and employees of the nuclear power station began to take readings on the streets and in the apartments. However, they hissed at the independent dosimeter operators: There are official data, why shouldn't you mind your own business. Why are you agitating the people?

I asked N. Chaban, chief physician of the disease control center, who brought pressure to bear. He laughed and said: I want to go on working, I have already been fired twice. Attempts to report the situation to the top echelons were nipped in the bud: The ministries zealously protected their secrets. A decision on decontaminating

Slavutich was made only when the secrets began to leak little by little and the public raised its voice. Last year alone, more than 200,000 cubic meters of soil were removed, and the same amount was shipped in; more than R50 million were spent.

Whichever way you look at it, the radioactive sword of Damocles will forever hang over the city, even if it is polished until it shines. The woods around the city cannot be cut over. According to preliminary calculations, another R50 million will be required to decontaminate them, but even this will hardly be a solution.

In a word, you are damned if you do and damned if you don't. The wind will keep carrying radioactive particles to the city, despite the forest being cordoned off by barbed wire. Meanwhile, apart from the isotopes of cesium and strontium known to exist here, plutonium with a half-life of 24,000 years has also been found in the emissions! Numerous commissions of scientists merely draw up protocols and send recommendations: You can't go here, you can't go there, keep to the footpaths only, vegetables are not to be bought from the populace without a test, special methods are to be used on garden lots, and so on.

One has difficulty calling this normal life. Some theoreticians from the union Academy of Medical Sciences and the Ministry of Health attempted to reassure the public and even developed the uniquely inhumane concept of "safe residence under unsafe conditions" in keeping with which 35 rem in a lifetime and 40 rem per square kilometer is nothing for a human to worry about. To be sure, not one of them has said thus far how small doses of radiation influence the human organism and how the isotopes are to be distributed among babies and schoolchildren.

As was to be expected, the government of the Ukraine, non-opportunistic scientists, and the public questioned this theory. A decision was made to include more than 1,500 localities of five oblasts in the zone of stringent radiation control and to establish additional preferences for a large segment of their population: The right to leave and be placed on waiting lists with a priority in the allocation of housing throughout the entire territory of the republic with the exception of Kiev and resort areas, an allowance of R15 monthly per member of the household for purchasing uncontaminated foodstuffs, reductions of work tenure by five years, and so on.

Incidentally, I did not find extensive radiophobia in Slavutich. Perhaps the inherent disdain of nuclear specialists for continuous risk was a factor. Looking at them, other residents of the city did not give in to panic either, all the more so because finding a dosimeter in this city is easy. To be sure, they began to clean their houses more often and treat their foodstuffs with more care. There is something else that concerns the people. The above resolution of the government applies to all of the surrounding villages—Nedanchichi, Mekshunovka where lots have been allocated for second homes, Redkovka,

Chervona Guta, Komarovka, Grabovka—and all of them are getting preferences whereas Slavutich is not.

So what can those who want to move do? The apartments here belong to the ministry. Only those who have worked at the station for 10 years or more may dispose of their apartments as they wish. The rest have no right to swap their apartments even if they could work out an arrangement—strange as it is, there are people who want to live "in the dirt," retire earlier, and be given preferences. It is necessary to finally make an official determination once and for all: Is there even the slightest danger to the residents of Slavutich or not? If there is danger the city ought to be placed in the proper category, with all the bonuses it is entitled to; if it is not so, this needs to be said and justified. At present, nobody can be easily fooled.

The last decision in February of the old composition of the Ukrainian SSR Supreme Soviet to close down the Chernobyl Nuclear Power Station by 1995 poured oil on the fire. Undoubtedly, this is a commendable though belated decision. However, there are 300 young specialists at the station; thousands of people have been allocated marvelous apartments recently, and all of them have plans for the future.

However, what is to be done if the provider-station is not around anymore? The issue of finding jobs for the families of nuclear power station personnel is acute in this city to begin with. To be sure, the station cannot be shut down just like that, and even after it is closed the units will have to be serviced for a long time. Also, after the accident an assignment was given by N. Ryzhkov to think through building dairy processing facilities and shops for the assembly of metering instruments here. However, when will this come true, and will it at all? Uncertainty makes the people nervous and injects tension into the difficult life of Slavutich.

First Secretary of the City Committee of the party V. Lukyanenko said: "The atmosphere in the city is hot. The populace has formed strata according to its interests, and each group is after its own goal. At the meetings and rallies, it comes close to hysteria."

I was to see for myself very soon how true these words were. Teacher L. Pavlova-Savelyeva, cochairman of the Pripyat Society, told me about many things she has encountered since moving here. When the employees of the station were invited to move from Kiev to Slavutich they were promised literally mountains of gold. Many of them left behind good apartments, but ran into speculation and indifference here. They got nothing of what the country has put together for the victims. To this day, 100 people have not had a medical checkup. They were placed on the general list as far as the supply of foodstuffs is concerned, whereas the health of all of them turned out to be damaged. A survey done on their own initiative showed that only seven percent of the children were healthy. In the first quarter, three out of 16 births were still births, and five babies were found to have

serious diseases. Not one of the "station people" got to take part in the advertised trip of child-victims to Israel (incidentally, Ukrainian SSR Minister of Health Yu. Spizhenko referred to it as a tourist trip), despite three children in Slavutich having acute leucosis and 13 children having leukemia; only one child went to Cuba.

This is the situation in the city today. The attitudes of the people reflect everything: the initial lies of officials, lack of confidence in belated admissions, the sluggishness of economic managers, the backwardness and confusion of science, and our overall homegrown negligence. However, the heaviest burden is that of the lack of a future for Slavutich or, more precisely, the unknown: Does the city have a future or not?

So far, no one has come up with a direct and complete answer. Meanwhile, it is badly needed. If we are not in a position to respond ourselves we should swallow our pride and ask for outside scientific and financial assistance. Just several days ago, the Council of Ministers of the republic appealed to the governments and the public of foreign countries and international organizations with a call for cooperation in hopes of receiving support because the Chernobyl disaster is increasingly becoming global in nature, and we cannot cope with its consequences alone.

Pilot Plant To Decontaminate Chernobyl Planned

LD2504150790 Moscow Tass in English 1427 GMT
25 Apr 90

[Text] Moscow, 25 April (TASS)—A pilot installation to decontaminate materials and equipment in the Chernobyl nuclear power plant zone will begin operation late this year.

A contract on its development was signed by the USSR Ministry of the Nuclear Power Industry and the West Berlin Recytech firm, the GOVERNMENT HERALD weekly reports today.

About 165,000 tonnes of contaminated metal now have been lying in the Chernobyl zone since April 1986.

The pilot installation of the Recytech firm can decontaminate up to five tonnes of metal per day. A tiny film with radioactive particles is removed from its surface by electrolysis.

The radioactive background of cleaned metal does not exceed the natural one.

The pilot plant's productivity is clearly insufficient, the weekly notes. It will take about 100 years to decontaminate all 165,000 tonnes of metal.

Therefore, the contract provides for manufacturing a commercial plant with higher productivity in the Chernobyl area.

For this purpose the Soviet production amalgamation Pripyat and the Recytech firm will evidently set up a joint venture.

Ukraine Plans New Nuclear Power Plant

LD2704120290 Kiev International Service
in Ukrainian 1700 GMT 26 Apr 90

[Text] [Announcer] Following the Chernobyl incident, the term nuclear power plant has become odious in the Ukraine. People are deeply concerned over the existence of such stations. Here is a report from Kharkov. Our correspondent, Mykola Marynenko, is at the microphone:

[Marynenko] This news has literally stunned the inhabitants of Kharkov Oblast: Contrary to their wish, those on high are preparing once again to build an Nuclear Electric Power Station there. But let us start right from the beginning.

In the beginning, those on high selected the site for the nuclear power plant near the settlement of (Birky). Residents of the oblast were aghast, because the site was located only several tens of kms from Kharkov itself. After many meetings and protests, after lengthy debates at various levels of power the construction was at last stopped, it seemed for good.

However, the Ministry of Atomic Power looked on things otherwise. A signal has arrived from Bliznyuko Rayon: the new nuclear power plant will be built there. The public has been stunned once again.

Radio Kiev has resolved to monitor this development and there will be sequels to this story.

Health Ministry Issues Memo on Chernobyl

LD0105174290 Moscow TASS in English 1057 GMT
1 May 90

[Text] Geneva, 1 May (TASS)—Representatives of the Soviet Health Ministry and the World Health Organisation (WHO) signed a memorandum here today on international cooperation to relieve the torturous medical consequences of the accident at the Chernobyl nuclear power station.

Provision is made for a long-term global programme to protect the health of the population living on contaminated areas as well as people who directly participated in dealing with the accident and cleaning up the aftermath.

An international radiation medicine centre will open in Obninsk. In accordance with the document, the WHO will coordinate international efforts to successfully implement the programme and the activities of the centre.

Chernobyl Press Conference Held at UN

*LD0205220290 Moscow TASS International Service
in Russian 1930 GMT 2 May 90*

[Text] United Nations, 2 May (TASS)—The consequences of Chernobyl constitute a disaster for all mankind, and their elimination requires the pooling of the efforts of the community of nations. This idea was the leitmotiv of a press conference that took place on Wednesday in the United Nations New York headquarters in connection with the fourth anniversary of the accident at the Chernobyl Nuclear Electric Power Station [AES].

Gennadiy Udovenko, the Ukrainian Soviet Socialist Republic's [SSR] permanent representative at the United Nations, drew journalists' attention to the fact that the governments of the Soviet Union, the Belorussian SSR and the Ukrainian SSR had, for the first time, proposed the inclusion of an extra item, "International cooperation in eliminating the consequences of the accident at the Chernobyl nuclear power station," on the agenda of the session of the UN Economic and Social Council (ECOSOC), which has opened here.

Replying to journalists' questions, the Ukrainian representative talked about the vast resources that are being allocated to the evacuation of hundreds of thousands of people from the zones that have been contaminated by radionuclides. New instances were presented, brought to light as a result of constant major studies, which indicate that there has been an underestimate not only of the scale of the accident's consequences at national levels, but also of the very phenomenon of Chernobyl, including its international aspects.

Yuriy Shcherbak, a deputy of the USSR Supreme Soviet and chairman of the Ukrainian ecological association "Zeleyy Svit" ("Green World"), who spoke at the press conference, described the broad complex of urgent measures that it is possible to implement with the participation of the governments and public organizations of the UN member countries.

Plan To Decommission Chernobyl, Aid Victims

*PM0105153390 Moscow IZVESTIYA in Russian
28 Apr 90 Morning Edition p 2*

[USSR Supreme Soviet Resolution on Integrated Program To Clear Up the Consequences of the Accident at the Chernobyl AES and the Situation Connected With the Accident"]

[Text] The USSR Supreme Soviet notes that the accident at the Chernobyl AES [nuclear electric power station] represents the greatest modern-day catastrophe in terms of its total consequences and is a nationwide disaster that has affected the lives of millions of people living in vast territories. The environmental impact of the Chernobyl catastrophe has confronted the country with the need to tackle new and extremely complex large-scale

problems affecting virtually every sphere of social life and many aspects of science, production, culture, ethics, and morality.

Enormous resources and the efforts of leading scientists and specialists have been directed toward these ends, which has made it possible to prevent the catastrophic development of events connected with the accident and radiation damage to the population and to reduce the scale of environmental contamination.

The USSR Supreme Soviet stresses that the measures being taken to clear up the aftereffects of the accident have been insufficient. An extremely tense sociopolitical situation has developed in regions subjected to radioactive contamination because of contradictions in the recommendations of scientists and specialists on problems of radiation safety and delay in taking essential measures, with resultant loss of faith in local and central organs of power among some of the population. In-depth study of the postaccident situation and the development of a validated action program is proceeding slowly, which is causing legitimate outrage on the part of the inhabitants of the region which suffered radioactive exposure.

The elaboration of the long-term integrated State Union Republic Program To Eliminate the Consequences of the Accident at the Chernobyl AES has not yet been finalized, and the republic programs to eliminate the consequences of the accident in the RSFSR [Russian Soviet Federated Socialist Republic], the Ukrainian SSR [Soviet Socialist Republic], and the Belorussian SSR need refinement. There is no general concept concerning safe conditions of habitation in contaminated territories acceptable to broad strata of the population—which complicates the sociopsychological situation and renders it impossible to implement adequately validated measures to protect the population of the affected regions. There is no full or detailed information available on the contamination of territory by radionuclides. Mistrust and protest on the population's part are generated by the provisional radiation dosage levels set for afflicted regions and the lack of provision of dosimetric and radiometric monitoring devices.

Tens of thousands of people living in zones of enhanced radiation have not yet been moved out. The construction of accommodation for evacuees is developing too slowly. The inhabitants of afflicted regions have not been fully provided with pure foodstuffs, essential goods, or appropriate medical services. Questions concerned with improving the health of the population, particularly children, are being tackled in an unsatisfactory way.

The large-scale decontamination of population centers is proving ineffective in many cases. Questions concerned with the reliable isolation of many sources of high radioactivity at the nuclear station industrial site and outside it have not been solved. Work is being carried

out on considerable areas of agricultural land contaminated by radionuclides without due regard for the emergency situation, which allows food contaminated in excess of the set norms to be produced and consumed and agricultural workers to be exposed to radiation. Essential acts of legislation governing the carrying out of agricultural work under conditions of radiation contamination are lacking.

The prevailing situation is in many respects the consequence of wrong assessments made at all levels of state management in the center and at local level regarding the scale and consequences of the Chernobyl AES accident as a truly global catastrophe, poorly coordinated action, an unwarranted monopoly on research, the classifying of data on the radiation situation, particularly in 1986, a lack of knowledge on the part of the population, and the absence of a fully empowered state organ responsible for carrying out measures to protect the population from the consequences of the accident.

The country proved ill-prepared to comprehend the event in depth or to solve promptly its scientific, social, psychological, and legal problems, and this has had an adverse effect on the elaboration and implementation of the large-scale package of measures designed to eliminate the consequences of the Chernobyl AES accident.

The USSR Supreme Soviet resolves:

1. To ratify the State Union Republic Program of Urgent Measures for 1990-92 To Eliminate the Consequences of the Chernobyl AES Accident, which was developed on the basis of republic programs and proposals by the State Expert Commission and submitted by the USSR Council of Ministers, as the first stage in a long-term state program envisaging the phased relocation of people from territories subjected to enhanced radioactive contamination, where normal, unrestricted living and working conditions cannot be assured, particularly for families containing children or pregnant women, the enhancement of health protection, the improvement of the social and consumer sphere, and the supply of pure foodstuffs to the population, above all children, that has suffered as a result of the accident.

To provide a separate paragraph in the 1991-92 USSR and Union republic socioeconomic development plans for the appropriation of financial and material resources to those ends. To seek the necessary resources, material, and equipment to carry out additional urgent work in 1990 in the light of comments made by USSR people's deputies.

The USSR Council of Ministers, the RSFSR Council of Ministers, the Ukrainian SSR Council of Ministers, and the Belorussian SSR Council of Ministers are to report annually to the USSR Supreme Soviet on the implementation of the aforementioned measures.

2. To approve the RSFSR, Ukrainian SSR, and Belorussian SSR programs to eliminate the consequences of the Chernobyl AES accident. The RSFSR, Ukrainian SSR,

and Belorussian SSR Councils of Ministers are to refine their programs in the light of the comments made by the USSR Gosplan [State Planning Committee] State Expert Commission and the proposals made by USSR people's deputies. The USSR Council of Ministers and the Councils of Ministers of the aforementioned Union republics are to take measures to execute the programs forthwith.

3. The USSR Council of Ministers, in conjunction with the RSFSR, Ukrainian SSR, and Belorussian SSR Councils of Ministers and with the involvement of leading Soviet and foreign specialists on this problem, is to complete the elaboration of the integrated long-term State Union Republic Program To Protect the Population of the USSR from the Impact of the Consequences of the Chernobyl Catastrophe and to ratify it by the end of 1990. The program is to be based on a humane concept of safe human habitation with prime consideration of the following aspects:

the fundamental improvement of medical service provision for the inhabitants, particularly children and juveniles, of the stricken regions, with medical personnel being recruited by advantageous contract terms;

the development and introduction of sorption methods of preventive work and dietary food available on prescription to prevent the buildup of radionuclides in the organism and accelerate their removal;

the improvement of the quality of the environment, the development of new approaches to lowering levels of radioactivity on contaminated territories, and prevention of the spread of radionuclides to new territories;

the development of a uniform state system of benefits and compensation for damage caused to the health of people who are living or have lived in contaminated territory, who are performing or have performed military service there, and also those who have been involved in clearing up the consequences of the accident; and the creation of a state register of those people;

the creation of an integrated radioenvironmental information system for all strata of the population, with extensive presentation of data on radiation contamination and healthcare and environmental statistics and the use of the opportunities afforded by the press, radio, and television; and the elimination of all secrecy in these questions.

4. To recommend to the USSR Council of Ministers that it set up a Committee on Eliminating the Consequences of the Chernobyl AES Accident and to recommend to the RSFSR and the Ukrainian SSR and Belorussian SSR Councils of Ministers that they set up appropriate committees in their republics, vesting them with the necessary authority to deal with this problem.

To deem it advisable to organize under this committee, in conjunction with the USSR, the Ukrainian SSR, and

the Belorussian SSR Academies of Sciences, a scientific coordination center to develop an integrated strategy for the measures under way.

5. The USSR Council of Ministers is to elaborate a draft Law on the Chernobyl Catastrophe and submit it to the USSR Supreme Soviet in the fourth quarter of 1990. The law is to define the legal status of the victims of the catastrophe, those involved in eliminating the consequences of the accident, people engaged in carrying out work in the stricken zone, and also those people subject to enforced resettlement, and also to define the legal conditions obtaining in the disaster zone, the procedure governing the population's life and work, and the procedure for performing military service and the formation and functioning of territorial organs of state management and social organizations in the stricken regions.

To submit to the USSR Supreme Soviet for examination by the fall session 1990 a draft Law on the Utilization of Nuclear Energy and on Nuclear Safety;

to elaborate before the end of 1990 a package of measures to decommission the Chernobyl AES power units and solve problems bound up with ensuring the social protection and rights of the station's workers and the nuclear and radiation safety of facilities in the electric power station zone and with the burial of radioactive waste and the safeguarding of the atmosphere and water sources from contamination by radionuclides;

to complete in 1990 the formation of scientifically based criteria concerning safe human habitation in the light of the no-threshold [besporogovyy] concept and other modern ideas;

to elaborate and ratify by September 1990 the special "Chernobyl Children" program on limiting and eliminating the impact of the adverse factors of the Chernobyl catastrophe on the coming generation in the light of all the social, environmental, and medical features of the problem;

to complete in 1991 the compilation of medium- and large-scale geographical, geochemical, and radioenvironmental survey maps of territory contaminated by radionuclides and the radiation certification of households in population centers located in the monitored zone;

to take measures to stop as rapidly as possible the production in contaminated territories of foodstuffs which do not meet the normatives. To step up state monitoring of the radionuclide content of agricultural products in zones subjected to radioactive contamination. To limit the use of chemical plant-protection agents in radiation-affected zones.

6. To urge the parliaments of all the countries of the world and international organizations to provide assistance in solving the problems of the Chernobyl catastrophe, including the creation of an international fund and scientific research center with the involvement of

leading world specialists. The USSR Council of Ministers is, with the participation of public organizations, to determine measures which ensure conditions conducive to international cooperation and the coordination of international help.

Monitoring of the implementation of this resolution is vested in the USSR Supreme Soviet Committee for Questions of Ecology and the Rational Use of Natural Resources and the USSR Supreme Soviet Committee for the Protection of the People's Health.

[Signed] A. Lukyanov, chairman of the USSR Supreme Soviet.

The Kremlin, Moscow, 25 April 1990.

Bryansk Oblast Radioactive Contamination Levels Decreasing

90UN0961A Moscow *PRAVITELSTVENNYY VESTNIK* in Russian No 6, Feb 90 p 10

[Article by Ye. Borisova: "Seventy Milion Rubles for Housing"]

[Text] The country's government will allocate R70 million to Bryansk Oblast this year. People from the rayons "contaminated" by radiation will move into new houses soon.

Following the Chernobyl accident, maximum allowable levels of radioactive contamination were exceeded in five oblasts of Russia. Fortunately, the situation returned to normal in four of them as early as the summer of 1986. The situation remained alarming only in Bryansk Oblast. In August, 76 families had to be evacuated from four localities in Krasnogorskiy Rayon. They were given housing, jobs, and all types of benefits and compensation. These were the first, most urgent measures. However, it was clear even at that point that many years of work on improving the ecological situation in the oblast were needed.

Seven rayons of Bryansk Oblast, with a population of almost 290,000, turned out to be quite heavily contaminated. Some 274 localities ended up being in the zone of "strict" control where restrictions on the use of foodstuffs of local provenance are in effect. You will understand the alarm of these people if you add to this 367 villages in which the level of radiation is lower, but in which one cannot drink milk. A number of preferences have been established for the residents of these localities; they receive monthly benefits for every family member.

In the fall of last year, the government of the Russian Federation determined that it was necessary to resettle more than 2,000 families in rayons where the level of radioactivity is within the norm. This decision was made taking into account the concept of radiation safety for the populace which had been developed by the health care organs. By January, 200 families had already had their housewarming parties. This year, design documentation for 23 new settlements will be prepared, and three

settlements with 200 houses each will be built. In general, enormous work has been done in the years since the accident. Here are just several statistics: Road, construction, and agricultural equipment, cars, machine tools, welding equipment, mobile diesel power stations—more than 18,000 pieces of equipment and machines in all have been additionally allocated to Bryansk Oblast. Residential houses (386,000 square meters), schools, day-care centers, and clubs (with almost 8,000 seats), roads, and water mains have been built. More than 200 localities have been decontaminated; 50 of them have been processed twice; and six—three times.

Agrochemical and land-reclamation measures have been reducing the contamination of farm goods year after year. This is extremely important: After all, radionuclides have contaminated close to half a million hectares of agricultural land in the oblast. Arable land accounts for more than one-half of it. By now, the content of radioactive substances in grains has declined by a factor of five to six. Last year, out of the 227,000 tons of grain procured in the oblast, only 1,000 tons, or less than 0.5 percent, turned out to be "dirty." The amount of meat unfit for use as food comes to the same 0.5 percent. For comparison, in 1986, 15 percent of the meat procured in Bryansk Oblast was contaminated.

...Nine radiological laboratories and groups at disease control stations were set up in the oblast immediately after the Chernobyl accident, as early as 1986. A laboratory of radioactive immunity was organized at the oblast hospital for children. In Novozybkovo, a radiological hygiene laboratory opened. Specialists from institutes in Moscow and Leningrad help physicians working in the oblast on a regular basis. Scrupulous medical examinations of the entire populace began as soon as August 1986. To this end, 430 specialists were sent to the oblast. By now, a considerable amount of material has been accumulated, the analysis of which confirms: The physicians have found no diseases associated with the impact of ionizing radiation or any connection between the doses accumulated and the course of chronic diseases.

In summation, we should mention that last fall the State Commission for Emergencies of the USSR Council of Ministers considered tentatively the draft RSFSR State Program for Eliminating the Consequences of the Accident at the Chernobyl Nuclear Power Station. The program is planned to last five years. During this period of time, it is planned to invest over R2 billion in construction and land reclamation, health care, and reinforcement of the social sphere in order to restore the normalcy of life in the oblast.

On the instruction of the government, a review of the programs prepared by Russia, the Ukraine, and Belorussia is now being conducted. The union State Planning Commission, the Ministry of Health, and the Academy of Sciences are taking part in the review. The results of the review will be submitted to the USSR Council of Ministers in March.

Tomsk Nuclear Plant Blamed for Contamination

*PM0405112290 Moscow IZVESTIYA in Russian
4 May 90 Morning Edition p 6*

[Own correspondent A. Solovyev report under the rubric "Urgent Warning": "Radioactive Waste Available to All"]

[Text] Tomsk—The people of Tomsk are getting agitated: Radioactive elks and hares are at large in the surrounding forests, and radioactive ducks and crayfish are in the streams and lakes. After examining 38 people who had eaten the flesh of wild animals and fish, doctors established that the level of radioactive substances in their organisms is higher than the permitted maximum. Seven people—four adults and three children—have been hospitalized.

The "incubator" of the radioactive birds and animals is known: the closed city of Tomsk-7 (it is also called Seversk). One of the USSR's first nuclear power stations [AES's] was built there in the early fifties. It supplies energy to the Siberian Chemicals Combine, which is also behind barbed wire, and supplies heat to agricultural complexes and housing.

Unfortunately, it does not only supply them, it also harms them. The more dilapidated the nuclear "old lady" becomes, the more capricious it grows. But not much is known about what happens behind the barbed wire—no reports are published about the AES except for assurances that everything is fine there.

In the first week of April some "Khimstroy" construction workers killed some hares. They themselves ate some hare meat, and they treated their wives and children. Others preferred fish....

On 18 April Tomsk-7 radio told the inhabitants: "Attention, radiation! Radioactive contamination of people has taken place in our city."

The author of the report was radio correspondent A. Grigoryev, by no means an unimportant character in this story; he used to work at the Siberian Chemicals Combine as senior engineer for monitoring stocktaking and storage of special output. His career ended when he discovered a vast quantity of radioactive output at the "plant" and raised the alarm, but at the time no one would listen to him. He wrote a letter to the Central Committee and L.I. Brezhnev. Grigoryev was reprimanded and threatened with expulsion from the party. But all the same, some measures were adopted.

Now times have changed. But although Grigoryev's first warning about radioactive animals went out on the radio—glasnost!—the second, more detailed, went unnoticed...

Workers S. Savin, V. Tekutyev, and their comrades are now sorry that they believed their bosses' assurances about the cleanliness of the territory where they were working. The bosses, to justify themselves, blame the

construction workers for everything: They violated the rules governing fishing and shooting in a green zone.... The doctors are worried—the radioactive waste burial site is poorly fenced and wild animals running into it could (and do) carry radiation all over the area. Contaminated water areas are also open to everyone.

The complacency of the local authorities is striking: They appear not to realize that the situation is patently fraught with danger, that the worn-out AES could become a second Chernobyl. One must agree with Grigoryev and the other specialists from Tomsk-7: An independent and authoritative commission should answer the tough questions posed by the people of Tomsk.

Government Commission Reports on Ufa Contamination

*LD3004053290 Moscow Television Service in Russian
1700 GMT 29 Apr 90*

[From the "Vremya" newscast]

[Text] The report by the government commission on the elimination of the disaster in the city of Ufa:

The government commission, set up on the instructions of USSR President Gorbachev and in accordance with the directives of the USSR Council of Ministers, has examined the circumstances of the phenol contamination of drinking water in the water supply system of the southern part of Ufa and the measures taken to eliminate the consequences of the disaster.

As a thorough study of the situation showed, the causes of the phenol contamination were blatant violations of production discipline, the criminally negligent attitude of the staff of the Khimprom Association toward the transfer operations of this product, considerable overflows, and also failure to comply with the procedure for pumping out industrial storm runoffs containing phenol.

Employees of all municipal services, together with representatives of Minzhilkomkhoz [Ministry of Housing and Municipal Services] of the RSFSR and production collectives, carried out considerable work making it possible by 12 April to normalize the quality of drinking water and, from 18 April, to lift all restrictions on the use of water.

Between 29 March and 20 April, 356 adults and 54 children went to Ufa's medical establishments. As of 29 April, there were 15 people in the hospital, including seven children with a worsening in chronic illnesses of the gastro-intestinal tract. Cases of phenol poisoning have not been identified. Medical checks on all children have been begun.

In accordance with numerous appeals by the population, a group of specialists of the World Health Organization has been invited for consultations. Their arrival is expected on 30 April. Files on those who are to blame for the disaster have been handed to the procuracy. For the

purposes of the radical improvement of the ecological situation in Ufa, the government commission, together with the local authorities of Bashkiria—and taking into account the proposals of public organizations—has submitted a draft decision to the USSR Council of Ministers which outlines measures for reconstructing enterprises of the chemical and oil-refining industries situated in the city. The text of the report by the government commission will be published in full in the press.

Commission Adopts Resolution on Kemerovo Pollution

*PM0904111090 Moscow SOVETSKAYA ROSSIYA
in Russian 5 Apr 90 Second Edition p 2*

[TASS report: "At the USSR Council of Ministers State Commission on Emergency Situations"]

[Text] At a routine session of the USSR Council of Ministers State Commission on Emergency Situations, the question of the fulfillment of the USSR Council of Ministers resolution of 12 June 1987 and other USSR Government decisions on environmental conservation in the city of Kemerovo was examined.

The commission, whose session was led by USSR Council of Ministers Deputy Chairman V.Kh. Doguzhiyev, noted that as a result of measures adopted in 1987-1989 on the construction of purification plants in Kemerovo and on the decommissioning of obsolete production units at enterprises of the State Agrochemical Association, the USSR Ministry of the Chemical and Petroleum Refining Industry, and the USSR Ministry of Metallurgy, the discharge of pollutants into the environment has been reduced by 20 percent. Some 5,000 people have been moved out of the health protection zones of industrial enterprises situated in Kemerovo.

However, the commission called the attention of USSR ministers Yu.K. Semenov, S.V. Kolpakov, N.V. Lemayev, M.I. Shchadov, and B.M. Belousov and State Agrochemical Association Chairman N.M. Olshanskiy to the fact that the ecological situation in Kemerovo remains tense and that the main sources of pollution are the enterprises of the USSR Ministry of Power and Electrification, the USSR Ministry of Metallurgy, the USSR Ministry of the Chemical and Petroleum Refining Industry, the USSR Ministry of the Coal Industry, the USSR Ministry of the Defense Industry, and of the State Agrochemical Association located in the city.

On certain days, especially in unfavorable weather conditions, the average daily concentrations of harmful substances in the city's atmosphere are several times higher than the established health safety norms.

The further improvement of the ecological situation in the city is in many ways held in check because of insufficient attention to the construction of nature conservation facilities on the part of Kemerovo Oblispolkom [oblast soviet executive committee], which was granted the right to determine autonomously in which

directions to channel capital investments, and also on the part of the RSFSR [Russian Soviet Federal Socialist Republic] Ministry of Construction in the Urals and West Siberia Regions of the USSR. The construction of nature conservation facilities in Kemerovo virtually came to a halt in 1989. An analysis of the plan for building these facilities in 1990 shows that this state of affairs is not changing. On a variety of pretexts, contracts have not been concluded for the reconstruction and retooling of a significant number of production units at enterprises of the State Agrochemical Association, the USSR Ministry of the Defense Industry, and the USSR Ministry of the Chemical and Petroleum Refining Industry. The RSFSR Ministry of Construction in the Urals and West Siberia Regions of the USSR not only steers clear of concluding contracts for the fulfillment of nature conservation measures, but carries out unsatisfactorily even the levels of construction and installation work that were adopted in the plan.

The decision taken on this question outlines a number of specific measures for improving the material and technical base of Kemerovo's construction organizations, increasing the volume of work on building nature conservation facilities at Kemerovo's industrial enterprises by the direct labor method and relocating citizens living in the health protection zones of these enterprises, switching Kemerovo's electric power stations and the boiler houses in the city's Rudnichnyy Rayon to gas, reducing the discharge of pollutants from the exhaust fumes of internal-combustion engines into the city's atmosphere, and improving the system of monitoring atmospheric pollution in Kemerovo and the waters of the river Tomi.

The commission noted that the USSR Ministry of Metallurgy has not fulfilled the USSR Council of Ministers resolution of 12 June 1987 as regards the decommissioning of coke battery No. 4, and demanded of S.V. Kolpakov that this task be fulfilled within the month. The ministry was entrusted with formulating within a month and submitting to the USSR Council of Ministers proposals agreed with Kemerovo Gorispolkom [city soviet executive committee] on finding jobs and making material and domestic provision for the dismissed workers and members of their families, and also on other social questions connected with the decommissioning of the battery. At the same time, the commission recommended to the USSR Ministry of Metallurgy and Kemerovo Oblispolkom and Gorispolkom that, with the participation of the USSR State Committee for Environmental Protection, the USSR Ministry of Health, and scholars, specialists, and representatives of the public, they examine the Kemerovo coal tar chemical plant labour collective's request for an extension of the term of operation of coke battery No. 4 and if need be to submit agreed proposals to the USSR Council of Ministers.

Astrakhan Gas Complex Not Meeting Promised Ecological Standards

90US0705A Moscow SOVETSKAYA KULTURA
in Russian No 10, 10 Mar 90 p 5

[Article by Valeriy Kiselev: "A Special Zone"]

[Text] It was a sunny day. The clear turquoise sky covered the immense Volga steppes like a dome. One almost did not feel the wind and the trail of white smoke extended from horizon to horizon. When we drove up to the region of this trail, the sharp smell of gas burst into the vehicle. If you had suddenly detected such a smell in the kitchen, you would immediately try to air out the premises—here, it is only possible to fling open a window into space. This is a zone for the special monitoring of the Astrakhan Gas Complex....

The Triumph's Price

Everyone remembers the triumphal television report on the opening of the Astrakhan Gas Complex when it was declared to the entire country that "this is an ecologically clean installation" that the complex's equipment was the most modern from abroad and that the technologies were the most advanced....

N. Toropitsina, the co-chairman of the committee to save the Volga, says:

[Toropitsina] In due course, it caused us to prick up our ears: why was an "ecologically clean installation" suddenly promised us—but, after all, optimism is in our blood.... We allowed ourselves to be lulled by the sweet ministry tales. And this with our sad experience in "great construction projects" and notorious native "maybes"! You see, they delicately passed over in silence such "trifles" as the fact that the complex was put into operation six months ahead of time and that the number of incompletely items, among which were a majority of the items to protect the environment, approached a thousand. Because of the unfinished work, equipment defects and the unreliability of the electric power supply, 137 stoppages of technical assemblies and lines occurred during 1988 alone and the plant was completely shut down 21 times—this is not an impression but was written in the conclusion of the RSFSR State Committee for the Protection of Nature's state commission of experts which submitted a negative verdict for the design of the second phase of the Astrakhan Gas Complex.

On whose account should this sad chronicle be entered?

On 27 February 1987, five cases of child poisoning and 15 cases of poisoning among the adult population were registered. On 1 March 1987, a discharge of gas and condensate into the atmosphere occurred, which led to the death of four people and the poisoning of six. On 19 December 1988, the concentration of hydrogen sulfide in the city of Narimanov exceeded the maximum permissible amount 55-fold during an emergency discharge. On 11 March 1989, it was registered that the maximum allowable concentration was exceeded 97-fold in the

specially monitored zone. On the night of 2-3 December of last year, a gas escape occurred because a valve in a drill broke down; the discharge exceeded the maximum permissible concentration by 162.5-fold.

Faithful to their tactic of silence, Astrakhangazprom representatives reported this accident only 17 hours later when there was a sevenfold increase in the maximum permissible concentration.

However, how did the state commission accept such a dangerous installation?

It has still not accepted it. It is as if the Astrakhan Gas Complex exists illegally. Moreover, the first phase, which has still not reached its design capacity, has been undergoing repairs for more than six months. Meanwhile, the construction of the second phase is being speeded up.

The designers are heaping the blame on the builders and these are blaming the corrosive gas which contains hydrogen sulfide. The complex directors blame... glasnost which has permitted the "hullabaloo to be blown about." According to their logic, they should eliminate it silently but the press is sounding the alarm and meetings are being held....

In June, Yu. Paraskun, the oblast procurator, issued instructions on completely halting the Astrakhanskiy gas refinery. Would you say that the law had prevailed? However, a protest followed from V. Chernomyrdik, the minister of the gas industry, he said that it was impossible to halt the operations of the complex. There were many reasons but the chief one being that the country needed sulfur. Meanwhile, a telegram flew from the RSFSR procurator's office to the oblast procurator's office: "Recall your instructions about halting operations. Report your implementation." No law can withstand departmental logic.

The Astrakhan committee to save the Volga along with the Saratov and Volgograd committees decided to send a request to the USSR Supreme Soviet about officially recognizing the status of the lower Volga as a "zone of ecological distress." Chernobyl's consequences stick like a lump in the throat. People are afraid that "sulphur byl [Sernobyl] will come next.

... The village of Seytovka was not lucky. It was not lucky because it was in the eight-kilometer special monitoring zone. It was also not lucky because of the wind-rose. The wind most often comes from the combine and then, even the tightly closed windows in the houses cannot save the people from its poisonous breath.

I met a group of inhabitants on the street. To the customary question: "Well, how are you today?"—they replied:

"There was a discharge of gas last night. When we woke up this morning, it was impossible to go outside. The entire brigade had to go to the polyclinic."

"Nausea, coughs, dizziness—in brief, not in condition to work."

"I never had high blood pressure in my life but today it is 200. I walk just like a drunk."

"They are probably lying to us that the combine is only operating at 30 percent. Most likely, it operates at 100 percent during the night! And they then report over the radio that the maximum permissible concentration is normal!"

They told me in the Seytovka polyclinic that 40 people, 16 of them were children, had come to it today. Two children and two adults were in serious condition: an acute aggravation of an asthmatic allergy and a heart problem. They put a pregnant women into the oblast hospital. The diagnosis for all who came to them was gas poisoning....

Close or Build Up?

From a discussion with V. Shchugorev, the general director of the Astrakhangazprom Production Association, and Ye. Antonov, his deputy for major construction.

[Kiselev] The public demands that the complex be halted or the second phase be frozen. What do you think of this?

[Ye. Antonov] This is unrealistic. To the contrary, it is necessary to accelerate the second phase's construction and to subject the first phase to a radical reconstruction in order to eliminate all the mistakes. Moreover, we have spent almost four billion rubles on the complex and on housing construction. You have only to just mention the closing of the complex and all our personnel will run off....

[V. Shchugorev] The Astrakhan Gas Complex includes more than a thousand production installations: drilling, extraction, transport, production, and refining. According to the draft there are six billion cubic meters of gas, two million tons of sulfur and two million tons of gasoline, diesel fuel and black oil.

The output of the Astrakhan Gas Condensate deposit appears, on the one hand, to be golden and, on the other hand, very dangerous because two acids—sulfuric and carbonic—are present in the gas. The quality of the materials and equipment is important here. But it is not always dependable.

Interruptions in the supply of electricity have inflicted a great deal of harm upon us. According to the French standard, the factory should stop operations for preventive maintenance once every four years but we have had occasions where the stoppages have been three-four times a day.

The design and technical capabilities provide for the discharge of approximately 104,000 tons of various compounds a year into the atmosphere—there does not now exist any more advanced technologies in the world.

However, there have been cases where the maximum permissible concentration has been exceeded fivefold or more for various reasons. I personally think that the vicinity of this complex would be unnatural for people and housing even if it operated perfectly. The difference between the maximum permissible concentration for production and for the population is a thousandfold; we accept only healthy people for work—however, there are old people and children in the combine's area.

The Yuzhniprogaz Institute recommended the construction of a plant 20 kilometers further into the steppes. However, the oblast directors' point of view won out. You see, this represented for them a chance to reconstruct the entire dilapidated housing fund in Astrakhan at the expense of the Astrakhan Gas Combine. Astrakhan did not suffer but the situation of the 14,000 inhabitants in the special zone was an unenviable one.

[Kiselev] Is it possible to correct matters somehow?

During January of this year, the USSR Council of Ministers Presidium examined the question: "Concerning the Development of the Astrakhan Gas Complex and Measures To Insure the Ecological Safety of Its Operation."

Apart from purely technical measures, the Astrakhan oblast and gas concern was charged with performing work during the first quarter to resettle the nearby villages. We will transfer the villages to a safe place; the inhabitants themselves will select the site.

A Gas Mask Near a Child's Bed

... When I knocked on the door of a small village house, a child in a ... gas mask... came to meet me. I thought to myself: "Are the children here playing some kind of chemical game?" However, everything turned out to be more serious.

In Garif Aynaliyev's family, six-year-old Artur endures the combine's "gas attacks" with much more difficulty than the others. During a night when a discharge has occurred and the child does not feel quite well, his mother puts a gas mask on him and he walks around in it until the wind changes.

Garif says: "When the Astrakhan Gas Combine was built, someone received a bonus, thanks and a promotion. What did we, the local people, receive? What awaits us and what will happen to our descendants? My father died at 49 and my mother at 52. My cousins—at 48 and 49. My relatives and friends did not reach retirement age. They have discovered that my son has a heart problem and my wife is often sick. What will happen to us?..."

From an interview with I. Dyakov, first secretary of the Astrakhan party obkom and member of the USSR Supreme Soviet.

[Kiselev] Ivan Nikolayevich, what is the root of this evil?

[Dyakov] The specialists have accurately defined it—it is the fluctuating power supply. It was decided to give Astrakhan power first and then our "skilled craftsmen" excluded a local power station from the design. You will not find the ends now of who is guilty. The stoppages of the complex are due to the poor supply of electricity and along with them there are additional discharges.

[Kiselev] What do you think of the demands to close the complex?

[Dyakov] We will perish without it. Almost a billion rubles from the complex's capital investments are going to social needs: gasification and the construction of roads, schools and housing. For decades, Astrakhan has not received such development. One can make our films about Stenka Razin without scenery backdrops. A total of 700,000 square meters of housing has been built thanks to the gas workers.

Yes, the discharges are our scourge. However, it is necessary to determine economic sanctions.... And then, you will see what happens. There is an enormous filtration field around our cellulose combine—even the birds do not alight on these pools. Recently, the dam broke and 200,000 cubic meters of toxic water inundated the nearby land. People worked for several days. If it got into the Volga, everything would die. How did it all turn out? They fined four people... 100 rubles.

[Kiselev] Ivan Nikolayevich, I understand that one can call the entire lower Volga a special monitored zone now.

[Dyakov] The Volga's lower reaches are now being threatened because 25 percent of the discharges from all enterprises, which are located throughout its basin beginning with Kalinin Oblast, are not cleaned. The entire Mendeleev Table gathers here. During the summer, even crayfish crawled out onto the bank to breath—such was the water....

Another problem is how to place the Volga Hydroelectric Power Station under the command of the natural water discharge. During recent years, the power engineers have continuously increased generation during the winter, the discharge of water increases and decreases during the spring. This is a blow against "fishing resources." It has been calculated that we lose 260 million rubles annually to this.

They are removing the water bit by bit. They closed the Volga-Chogray Canal but they are building the Volgo-Don 2. Is it needed? There are no conclusions. Meanwhile, it will carry away six cubic kilometers of water. Specialists have estimated that we will lose 2,000 tons of sturgeon and 18,000 tons of netted fish. Is this reasonable? We like to receive an extra bag of grain but we are losing a quintal of very valuable fish. Yes, the desert is catastrophically advancing on our steppes—with a speed of five hectares an hour. Let us think about what our "experiments" will come to.

A decree on ecologically improving the Volga and Caspian Sea basin has been in the USSR Council of Ministers since June of last year. It defines measures for putting into order and constructing new purification works at each enterprise in the Volga-Caspian basin. Hundredfold fines for inflicting ecological damage are being proposed. This is the first fitting decree to save the Volga and the Caspian. It is necessary to adopt it! You see, it has lain for seven months—this delay is inexcusable in such an acute situation.

[Kiselev] ... A gathering, rather more appropriately a meeting, occurred in one of the kolkhoz brigades. The party committee secretary, central dispatch chief and deputy chief engineer of the plant came. Reduced to dire straits, the people showed that it was impossible to live there any more. The representatives from the complex tried to calm them: They said that the maximum permissible concentration was exceeded only 1.5-fold. However, the monitoring laboratory is located on the complex itself and it is impossible to recheck the data.

When I flew from Astrakhan, they broadcast over the local radio that there was another discharge at the complex and that the maximum permissible concentration had been exceeded 5.5-fold in the settlement of Komsomolskiy. This means that the wind had changed and that the young lad, Artur, could remove his gas mask.

However, who would put it on in Komsomolskiy? ...

Ecological Rally Protests Cheboksary Power Station Development

*LD1003231790 Moscow Domestic Service in Russian
1900 GMT 10 Mar 90*

[Text] An authorized ecological rally was held in Yoshkar-Ola today. Taking part were the leaders of town organizations, scientific workers, members of the public, and people's deputies. The main issue was to prevent any further rise in the water level of Cheboksary Hydroelectric Power Station [GES]. Failure to stop this might lead to serious ecological and economic consequences for the Mari Autonomous Soviet Socialist Republic. Thousands of hectares of cultivable land, meadows, and forests on its territory will be inundated, and subterranean springs supplying the inhabitants of the kray with drinking water will be destroyed. Those taking part in the rally adopted a resolution demanding that the USSR Ministry of Power Engineering should be forbidden to carry out more construction at the GES. It was decided to send the text of the resolution to the country's Congress of People's Deputies, the Supreme Soviet, and the Council of Ministers of the USSR, Gosplan [State Planning Committee], and the Commission for Environmental Protection.

Commission Approves Georgian SSR Environmental Plan

*90US0713A Tbilisi ZARYA VOSTOKA in Russian
28 Feb 90 p 2*

[GRUZINFORM report: "Ecology is a State Concern"]

[Text]Information From Government House

The Commission on Ecology of the republic's Council of Ministers discussed and generally approved the draft State Program of the Georgian SSR for Protecting the Environment and Making Efficient Use of Natural Resources for the 13th Five-Year Plan and for the period extending to the year 2005. It was worked out under assignment from the Georgian Communist Party Central Committee and the republic's Council of Ministers by the Georgian SSR State Committee for the Protection of Nature and Timber Management and by the Georgian Academy of Sciences, with the participation of republic scientists, practical ecology workers and members of the community.

It was underscored at the commission meeting that this program is to serve as a platform of practical action for improving the ecological situation in the republic. Describing its goals and tasks, G. Kutatladze, deputy chairman of the Georgian SSR State Committee for the Protection of Nature and Timber Management, and M. Tsitskishvili, scientific secretary of the Ecology Commission under the Presidium of the Georgian Academy of Sciences, stated that it provides first of all for improving the entire system for making efficient use of natural resources and for the precise coordination of scientific and technical work in this area. In addition to the establishment of a state monitoring network for protecting the environment, the program covers comprehensive studies for a thorough analysis of all the nature protection factors and the development of an ecological plan for the republic's socioeconomic development. It is unusual in that it specifically defines not only the tasks involved in protecting and making efficient use of land, soil, water, air and the plant and animal world, but also matters pertaining to ecological training and education and the promotion of environmental protection and other pressing problems in this vitally important area.

The discussion of the main provisions in the program was thorough and substantive. Taking part in it were members of the commissions as well as invited scientists and specialists, leaders of a number of ministries and departments, scientific establishments and educational institutions, representatives of creative unions, the All-Georgian Rustaveli Society and the People's Front of Georgia, other public organizations and their nature-protection and youth associations.

Analyzing the state of the environment in Georgia, the speakers stressed the pressing need to implement effective steps to save the republic from an ecological disaster and create conditions which would ensure the health and

the ecological safety of the present and future generations. There was a constructive discussion about ways and means of preserving the biosphere, protecting and making efficient use of the land, restoring the flora and fauna, the air and water, and restoring the potential of natural resources for the republic's effective socioeconomic development. It was pointed out that prime attention must be given to the restructuring of ecological thinking, the development of ecological knowledgeability, awareness and glasnost, and the involvement of the broad public in nature-protection work, which has a special place in the hierarchy of vital values.

The participants in the meeting were unanimous in their belief that, as reflected in the program, steps must be carried out in a planned manner in all areas of the republic's national economy to apply resource-conserving, minimum-waste or waste-free production processes. There was also complete support for the proposals that a new and effective system for making efficient use of natural resources must be worked out and implemented on the basis of economic methods of management, that it is essential to establish a unified information system for ecological monitoring and observation of the environment and to ensure the ecologically sound distribution of production forces and the reproduction of natural resources. Great satisfaction was expressed in the concept contained in the state program to the effect that we need to establish mandatory ecological expert appraisals both of plans for the construction, the expansion and reconstruction of large national economic facilities and of existing production facilities which are causing considerable harm to the environment. It is proposed that not a single project of any significance be built in the republic without a finding from such a commission of experts.

The draft state program covers not just the specific tasks involved in making efficient use of natural resources, but also the main directions for their implementation. Separate chapters also cover matters pertaining to the implementation of scientific and technical and ecological policy in the area of resource conservation and environmental protection, restructuring of the very system for administering nature-protection activities, the development of international cooperation in the area of nature protection, and so forth. Also precisely spelled out in the program are practical steps to protect the environment and make efficient use of natural resources, which it is planned to implement during the 13th Five-Year Plan and extending to the year 2005, as well as the stages of their implementation. In the first stage (1991 to 1995) it has been decided to channel all financial and material resources mainly into the elimination of the crisis situations in those cities and rayons and at those industrial centers where the ecological situation is still particularly bad and there is a danger to the health of the population. In the second stage (from 1996 to 2005) the resources allocated are to be used for increasing nature-protection, mainly restorative, work.

Due to the fact that many worthwhile comments and constructive suggestions were made during the preliminary discussion of the draft state program, it was decided to establish an editorial board to be chaired by G. Sanadze, vice president of the Georgian SSR Academy of Sciences, to finalize the text. It will then be submitted for consideration to the Presidium of the republic's Council of Ministers, after which it is planned to publish the draft program in the press for universal discussion.

The commission's work plan for 1990 was approved at the session.

N. Chitanava, chairman of the Georgian SSR Council of Ministers and commission chairman, summed up the session.

Spokesman on Program, Goals of Georgian Greens Movement

90US0713B Tbilisi ZARYA VOSTOKA in Russian
28 Feb 90 p 4

[Interview with Zurab Zhvaniya, executive secretary of Greens Movement, by Eka Akhalkatsi: "An Important Subject: What Concerns the 'Greens'"]

[Text] [Akhalkatsi] Remember the first flashes of glasnost in our republic? The beginning of the mass meetings, demonstrations and the expressing of "one's thoughts aloud"? And the first victory, when the government, pressured by public opinion, decided to halt construction of the Transcaucasus Main Railway? The foundation for the establishment of the Greens Movement in Georgia was laid at that time. The outline of the organization, now registered with the Georgian Council of Ministers, was only indicated with a "dotted line" at that time, however.

[Zhvaniya] In April of 1988 we founded the Ecology Association under the All-Georgian Rustaveli Society. It was headed by Georgiy Tumanishvili, professor and corresponding member of the Georgian Academy of Sciences. He is its president to this day, but the association is only a part of our organization. It united everyone actively opposing construction of the main line. Our first act was to demand that construction of the Trialeti Waterline be abandoned. Incidentally, many people probably recall that we scientifically substantiated our position and discussed all of the pros and cons before the broad public.

[Akhalkatsi] Then it was an association uniting specialists? As I understand it, you have no political demands. Is that correct?

[Zhvaniya] No, we are a scientific association of professionals. We announced at the very beginning that we are a public-political organization established for purposes of protecting the society's interests in matters of environmental protection. The establishment of the Greens Movement was approved at our first conference, held in December of last year.

Today Georgia's Greens are a free public-political organization with around 6,000 members. Their basic principles are ecological safety, democracy and nonviolence.

[Akhalkatsi] Zurab, you consider the case of the KhudoniGES to be a graphic illustration of your organization's operational methods. Describe it in detail.

[Zhvaniya] I shall never forget a statement tossed out by one of the authors of the KhudoniGES plan. He said that he would not change a single feature of the plan even if God himself were to descend from the sky. Our specialists developed an entire concept which scientifically substantiated our opinion on the inadmissibility of building the Inguri series of hydroelectric power plants, and there were plans for seven or eight of them. We submitted the documents to the republic government, but the people there closed their eyes, stopped up their ears and pretended that we did not exist. We were constantly traveling to Verkhnyaya Svaneti, to Mestia, and talking with the people. They were beside themselves with joy that someone was finally taking an interest in their problems. We attempted to state our position also in the republic press, but not a single newspaper would accept our articles. We were forced to arrange a mass meeting at the Tbilisi Hippodrome. This was on 4 March 1989. I believe that the Georgian government was influenced particularly by the fact that the meeting was organized by Professor Givi Tumanishvili, Academician Merab Aleksidze, Shota Adamiya, director of the Geology Institute, and other well known scientists, and that writer Naira Gelashvili presented a brilliant speech. After that the authorities were forced to give the go-ahead for publication in newspapers. A strange situation developed, however. The articles appeared in the newspapers, but construction... moved right along. The residents of Mestia announced a hunger strike. They were subsequently joined by residents of the settlement of Khaishi, and the Ilya Pravednyy Society continued the action. The hunger strike continued until Georgia's government suspended the construction. And so, we use all possible forms of protest. And, as you can see, the Greens Movement is more than just a nature-protection organization.

Greens exist in almost all the European nations and are members of parliament in 15.

[Akhalkatsi] Zurab, what is the political program of Georgia's Greens?

[Zhvaniya] We reject the revolutionary path of development for the society, since we believe that revolutionary reforms are limited only to the changing of the people involved. The goal is radical alteration of the existing system, and it can only be achieved through a progressive, intensive evolutionary process. We believe that the ultimate resolution of all the problems is possible only after full restoration of state independence. Georgia will continue actively to participate in the process of political and economic cooperation throughout the world, but it must always exist independently, in a situation of real

equality. I particularly want to stress the fact that those problems which trouble the republic's non-Georgian population can be resolved only in a situation of Georgia's independence. This means that promoting the achievement of this goal is first of all in their own interest. And until this occurs, the constant inciting of inter-ethnic clashes will continue. After all, this plays into the hands of those with an interest in preserving the imperial system at the expense of Georgia's residents. It is our view that we must create new associations of free people, each member of which recognizes his personal responsibility.

[Akhalkatsi] It is my understanding that you are establishing contacts with Greens from other nations....

[Zhvaniya] Yes, I visited the FRG last year at the invitation of the Greens, and we recently returned from Sweden, where we took part in a conference on the subject "Greens in Parliament." It was devoted to working out a single parliamentary policy for the Greens. A special parliamentary commission will arrive in Tbilisi in May. It includes members of the parliaments of the European states and the European Parliament in Strasbourg. Its purpose is to study the political situation in Georgia. Incidentally, the decision to establish this commission was adopted at the forum in Sweden.

[Akhalkatsi] And the final question. How is your emblem interpreted?

[Zhvaniya] It is an ancient Georgian symbol designating the unity of the sun, fire and motion, and in the final analysis, our entire planet. I believe that it conforms perfectly to our purpose.

**KaSSR Environmental Official Scores
Bureaucratic Impediments to Ecological Action**
90US0658A Alma-Ata KAZAKHSTANSKAYA PRAVDA
in Russian 17 Feb 90 p 3

[Article by Yu. Golobachev, Kustanay Oblast Committee for Environmental Protection department head: "What the Protocol is Hiding"]

[Text] As one of the duties of my job, I watch the newspaper attentively for publications on environmental protection. I will say frankly that it is offensive that thus far I have seen no serious moves made in this large and important matter of state. And this is at times due not so much to poor instructions and decrees, as the article "The Hunt is on for...a Law" specifically mentions, but to the fact that these laws are developed and signed by people who are themselves sometimes very far from the needs of environmental protection, and who frequently are completely incompetent in these issues. And we, instead of saying: "But the king is naked!" rush blindly to carry out their orders. Something like this has occurred, in my opinion, with the protocol for the temporary demarcation of regulatory functions between the Kazakh SSR State Committee on Environmental Protection [Goskompriroda] and the republic's Ministry of Forestry.

ECOLOGY

This document, as it seems to me, is an extremely rare work of the paper-producing art, capable of decorating a museum of bureaucratism, if such a terribly instructive and useful museum should ever be created. The first point of this document says that government administration of the protection and utilization of the animal world is one of the functions of committees on environmental protection. Everything would seem to be clear, but in reality, these functions as well are performed by the Ministry of Forestry. Which government administration by the committee the document could be talking about is unclear, if the committee does not possess the necessary rights for it. Specifically, the committee does not issue authorizations for the utilization of the animal world, and does not regulate the load on hunting or on usable land for general use. It is clear that this declaration is not supported by actual and functional powers.

I will give an example. Land that is populated by marmot colonies falls into the area being quarried by the Turgay Boxite Mining Administration. The Arkalyk Inter-Regional Hunting Society planned to take 250 of these valuable animals from here last year. The society went to the Kustanay Committee on Environmental Protection for permission. However, the Committee made no decision whatsoever, but sent the request on to the Kustanay Lumber Association, which still has not issued an authorization. It was necessary to shoot the marmots without documentation. They should not become extinct because of our bureaucratic muddles!

Let us read further in the protocol. It is written there that the following functions fall within the competency of the state committee: monitoring the observation of hunting regulations and the procedures for the exploitation of hunting industry resources and hunting lands; the issuing of sanctions against citizens and institutions, organizations and enterprises for violations of the regulations for utilization of the animal world and the habitats of wild animals according to protocols compiled by environmental protection staff and community inspectors; the creation and administration of the activities of a community environmental protection inspectorate; the issuance, according to established procedure, of authorizations for the utilization of the animal world with the exception of species of hunting industry fauna; conducting government surveys and regulating observation of the established procedure for the state's animal inventory.

What can I say, they are excellent points. Everything would seem to be clear: the basic functions for the protection and rational utilization of the animal world have been transferred to Goskompriroda. However, let us not rush; we will read through the points that set out the functions assigned to the Kazakh SSR Ministry of Forestry. Here they are: it issues, according to established procedure, authorizations (licenses) for the right to utilize hunting industry animals; it organizes the sole state inventory service and register of hunting game and ensures the carrying out of inventories of hunting lands in the Kazakh

SSR; it is responsible for government hunting surveillance of the observation of hunting regulations, the war against poaching and other violations of the regulations governing the utilization of the animal world and its habitat; it creates and administers the activities of a community hunting inspectorate; it issues orders according to protocol on violations of the regulations governing the utilization of the animal world and its habitat, issues sanctions against violators of the regulations governing the utilization of the animal world and its habitat.

As you can see from the above, the greater portion of Goskompriroda's rights are covered by the rights of the Ministry of Forestry. True, there is one clever, bureaucratic catch that says that the Committee has everything, while the Ministry of Forestry has only hunting industry animal species. In reality, all this means is that the Committee only has power over species that have been entered in the Red Book, which cannot be hunted, and for which authorization is given only in special cases. The Ministry of Forestry, then, has power over all of the others.

Next question. Nor will you catch the difference immediately between "conducting government surveys and regulating observation of the established procedure for the state's animal inventory" (the Committee), and "organizes the sole state inventory service and register of hunting game" (the Ministry of Forestry). Here the activities of the Committee are once again limited by the Red Book, while the Ministry of Forestry is responsible only for hunting industry animals. One may ask, but where are the animals that have been entered in the Red Book, on Mars? Or has someone already found a way to keep these species from inhabiting areas that have been placed under Ministry of Forestry jurisdiction?

Further. The issuance of sanctions against citizens and organizations for violating the regulations governing the utilization of the animal world has been allotted to the Committee, while conducting government hunting surveillance of the observation of hunting regulations and issuing decrees went to the Ministry of Forestry. It turns out that both the Committee and the Ministry of Forestry are regulating the correct utilization of the animal world. The completely cosmetic difference lies in the fact that on almost all of the points, the Ministry of Forestry is called "government," while according to the protocol, it is very difficult to understand whether the Committee is government or community. It is important that both create departments for the protection of the animal world. Both of them, naturally, are concerned with the battle against poaching, and both possess the right to create their own community inspectorates. This sort of redundancy must be good for someone, but it is not good for the flora and fauna, as the incident of the Arkalyk marmot resettling has convincingly demonstrated.

In connection with this, one begins to doubt the wisdom of the measures being taken to liquidate the Kazakh Main Hunting Administration [Kazglavokhota]. In my opinion, this was an organ endowed with enough powers to resolve these problems correctly. But it no longer

SOVIET UNION

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14 May 1990

exists; its workers and material and technical means have been taken and distributed between two departments. So far, this action has been the cause of more negative than positive situations in the aktiv. I will say, simply, that as a result of this split, protection of the animal world has been weakened significantly, a fact which is reflected directly in flare-ups of poaching.

I am ready to accept reprimands for my alleged attempts to defend the old structures or to win greater rights for Goskompriroda, where I now work. I will answer in advance that in this case, I am being led by my anxiety and worry for our mutual concern, the protection of the environment. I am certain that this is obvious to any non-prejudiced eye. I have worked for almost eight years in the environmental protection system. In this time, I have detained nearly 800 poachers and violators of hunting regulations. From my own experience, I know what kind of an enormous social evil this is, and how difficult it is to fight. Even more so, under today's disjointed and muddled conditions, which are not being eliminated, but are, on the contrary, being multiplied by this type of—with your permission—document.

How can any kind of effective protection of the animal world even be considered, when the chairman of the Kazakh SSR Goskompriroda himself, Comrade A. P. Korotkov, feels that the workers of the Committee that has been entrusted to him should not be the ones to run around catching poachers. If they don't want us running around, at least one powerful organ for the protection and rational utilization of the animal world must be created. Kazglavokhota could even be resurrected, as a department of Goskompriroda. I know that Glavokhota's reputation was "soiled" by a series of its former administrators. However, I do not understand why those whose business it was did not notice that this organ, in the last few years, had begun reliably and surely to get to its feet again, and to acquire authority.

But they threw out this hope-inspiring "infant" with the muddy water that had accumulated over the long stagnant years. In its place, they have managed to create a mass of organizational and juridical contradictions. While there was one, shall we say, legislator for these issues before, now there are five. After all, besides Goskompriroda and the Ministry of Forestry, there are Kazokhotrybolovsouz [Kazakh SSR Hunting and Fishing Union], Minmestprom [Ministry of Local Industry] and Kazpotrebsovuz [Kazakh SSR Consumer Union] functioning in the same area, with their own hunters and stalkers. But at times they don't know whom to turn to, even with the protocols aimed at poachers. I am not even touching upon the more complex issues, the solutions of which, during a period of such confusion, often find themselves at a dead end, thanks to the multitude of departmental barriers and bureaucracy from which we in environmental protection are not only not free, but which, on the contrary, is creating all of the preconditions for new obstacles. And the environment is like the child with seven nannies who, all the same, is left uncared for.

Kazakh Editorial Supports Siberian River Diversion Plan

18320030A Alma-Ata SOTSIALISTIK QAZAQSTAN
in Kazakh 12 Mar 90 p 1

[Editorial: "There is No Other Way, Siberian Waters Must Be Turned South"]

[Text] Today it is not possible for anyone to remain aloof when he hears these words. It is well known that the Aral tragedy is not just being thought about in this republic, but in the entire Soviet Union, and even in the world.

Not a little time has passed since the alarm was raised about the "Aral." At that time many good ideas, proposals and plans were advanced to save the sea. It is well known that among them the proposal to turn waters of Siberian rivers south to the Central Asian republics and Kazakhstan has found the support of many scientists and specialists. The proposal was widely publicized and our hopes began to rise. But we rejoiced too early: it is a fact that the question was put aside by a resolution of the CPSU Central Committee.

How could this be so? Were we not destroying the Aral before our very eyes! We saw the truth of the disaster that lay before us: if civilization allows the sea to dry up, thereby civilization itself will become subject to inconceivable damage. Proof of this is the fact that the millions of tons of bitter dust raised by the wind from the sea bottom left bare by the retreat of the sea has already begun to fall not just in our region, but likewise in a number of oblasts of the RSFSR, Belorussia, in Latvia and in other places still more remote.

Thus, taking these circumstances into consideration, the CPSU Central Committee and the USSR Council of Ministers the year before last issued a special resolution "Concerning Measures to Fundamentally Improve Ecological and Public Health Conditions in the Aral region, Use More Efficiently and Protect water and Land Resources in the Aral Basin." Last year there was a meeting of party and economic activists in Kzyl-Orda Oblast on how this resolution is being carried out. It was shown at the meeting that economic problems accumulated during the years of stagnation had considerably damaged our environment. For that reason, along with questions of protecting water and land resources, there was also detailed discussion of the issue of achieving economic, ecological, social and democratic tasks in a coordinated manner. As what little has been done in this area was reviewed, the discussions returned again and again to water. There was good reason for this.

Indeed, above all the Aral needs water. But its present state is not a good one. It has been proposed that the amount of water flowing into the Aral during an entire year reach 30-35 cu km. There is no way this can be achieved. What must we then do? Should we sit on our hands?!

It is no secret that in this respect we have been a little timid in comparison to the scientists and poet-writers of union republics such as neighboring Uzbekistan and Turkmenistan. Our voice is still impotent as we watch the Aral go. We knock shyly at the doors of the responsible ministries and organizations. We do not know what our Social Committee for Aral and Balqash Problems has done, what it proposes to do. If things continue as they are now will we not one day find ourselves suddenly deprived of the Aral, desolate?..

Rawshanbek Bektibayev, official of the Kazakh SSR Ministry of Land Reclamation and Irrigation, member of the USSR Writers Union, thus brings out the truth on these issues. Please read his article on page four of the present issue of our newspaper.

Kazakh Water Official Calls for Siberian River Diversion

18320030B Alma-Ata SOTSIALISTIK QAZAQSTAN
in Kazakh 12 Mar 90 p 4

[Article by Rawshanbek Bektibayev, official of the Kazakh SSR Ministry of Land Reclamation and Irrigation, member of the USSR Journalists Union: "There Is No Other Way, Siberian Waters Must Be Turned South"]

[Text] When our father Qorqyt spread out a rug on the water of the Syr-Darya and caused his blessed qobyz to wail, was he not presenting to our eyes a future in which the waters of the Aral have withdrawn, when the children are dying, when mothers produce milk mixed with blood from their breasts, and when the people are sad and grieve? Indeed, that man, who went to each of the four corners of the world, would never have been able to understand such a horrible thing.

Although this is a matter of a writer-fantacist speculating about the distant future, it causes us, we who have written in this genre, to think deeply about the Aral and Syr-Darya tragedy, and about the future of the people of the five republics situated near to the Aral and Syr-Darya, in our capacities as officials of the Ministry of Land Reclamation and Irrigation. To be sure, no writer, poet or citizen can fail to be moved, not feel deeply about this situation. For this reason, our senior writer S. Zalygin has opened his soul to his little nation, has come out resolutely against turning a portion of the Siberian waters towards Europe and Central Asia, and has waged a major struggle. But the writer once had a different view. He wrote in 1970, as he began his career in land reclamation and defended his dissertation as doctoral candidate in this area, that "a reservoir will be built sooner or later on the Ob River. It will save the Ertis and the dry regions of Central Asia from becoming desert." Now a number of overstated statistics intended to prove that historical and cultural sites and favorite spots of the Russian people in the European portions of Siberia will be put under water, and that there will be no economic benefits at all have been mentioned freely. On this

matter I am forced to refer to an article on this subject which appeared in last year's issue No 6 of the magazine ZVEZDA VOSTOKA. It is stated there: "That richness which we are most proud of—is our land irrigated for centuries. Only water is needed for the white-golden cotton which has become the symbol of our republic, for grape vines bending from their weight of fruit, for ripe red pomegranates catching the eye like a flash of sunlight. The principal arteries for water reaching us are the Amu- and Syr-Darya. Whereas these rivers provide moisture of only 100 cu km even in very wet years, some 80 percent goes to irrigate 7 million hectares of land. The remaining 20 percent will no longer be used after 1995. But this has to do only with the Amu-Darya, and it is well known that Syr-Darya water is entirely used for economic purposes. Because of this the water does not reach the Aral.

This is the reason why the 30 million people living around the Aral Sea now no longer can find the water they need for their daily lives. According to demographic projections, the total populations of the republics bordering on the Aral will reach 50 and 70 millions in the years 2000 and 2010 respectively. But S. Zalygin has suggested no ways whatever for saving the Aral. This is the reason that we have again proposed diversion of Siberian waters, in spite of his opposition. Thus it is written in the article.

But, taking this into consideration, even if we, under present circumstances, completely economize in our use of water and if we conserve every drop in the field, we will still in the end have no other recourse than turning the waters of the Ob branch of the Siberian waters in our direction. We are not trying to take water from the European Portions of Siberia (the Dvina River, Lake Onega, the upper Pechora), but from the Ob. Whereas the amount of yearly flow of the Ob is 397 cu km, we only need 7 percent of this. What we are proposing in this regard is to dig a canal up to Tobyl City from the place where the Ertis feeds into the Ob, and from there to bring the water to the Aral through the Toghay foothills. The width of the canal dug from Tobyl city would be 150 m, its depth 14.5 m. This area seems to be suited to this purpose by nature. This is very convenient. It has been observed that some mountain peoples load donkeys with heavy loads to bring water to difficult areas and turn them loose. When this happens the poor donkeys, to make it easy on themselves, look for the easiest paths in the mountains. Thus they deliver their loads to their intended goals without overdoing it. If we were thus to extend water pipes along the paths used by the donkeys this would turn out to be the most convenient route. Is not this a matter of people having to learn more from nature itself? Likewise, we must take into consideration the natural peculiarities of the Toghay foothills.

The Ertis River is one of the great tributaries of the Ob. Since much of its flow is through Kazakhstan, it must seem that S. Zalygin has no right to say anything about this river. S. Zalygin must understand that the area from the Ob to Tobyl is wilderness, a region where people do

SOVIET UNION

not live and is impenetrable marshland. However, it must be mentioned that scientific research was carried out on a broad front during the years 1976-1980 which concluded that turning Siberian waters towards Central Asia would result in no ecological and economic difficulties. To be sure, as writers such as S. Zalygin, Bondarev and Belov, and academicians such as Yanshin and Golitsyn have said, certain circumstances could have a negative impact if Siberian waters were turned from the European portions of Siberia to the Edil river. But be this as it may, the uproar about this has nothing whatever to do with the turning of Siberian waters towards Central Asia, it would seem.

To be sure, we understand the good intentions of our elder brother writer. But we must surely think of the future of the 70 million persons living in the Aral area. What is a thousand wildernesses to the life of one child? We must also take this side of the matter into consideration.

Some 65 cu km of water are needed a year to stop the withdrawal of the Aral and restore it. Because of this, it appears that 14-19 billion rubles of financing will be needed if we add in costs for work to run water from Siberian areas, water to be added from the Caspian and other waters from varied sources through reservoirs. If we give up use of 60 percent of our lands this will result in a decrease in national income of 18-20 billion rubles. As can also be seen from this fact, the state will not gain a great deal from diverting Siberian waters.

Some 30 cu km of water a year are needed to keep the Aral at its present level. Many cu km of this will evaporate. Only 10 cu km of water presently flows into the area from all locations. This is 22 cu km too little. When there has been a complex refurbishment of all land reclamation systems, and when waters behind various dams have been taken into consideration we can find another 10 cu km of water. However, according to the calculations of a state commission this will require our giving up cultivation of 9 percent of our irrigated lands and our ceasing immediately to develop new irrigated lands (7.2 million hectares). Since the increase in the population by the year 2000 will be 20 millions, per capita irrigated land will decrease from 0.21 hectares to 0.13 hectares. This means that in place of the 2300 rubles now spent for yield from one hectare, 4500 rubles will be spent, or a two-fold increase. From this point of view, the proposed measures are utterly impossible from an economic point of view.

Judging by what the great Greek historian Herodotus said about our region, once called Turkistan, it seems to have exceeded Egypt in fertility. In those times the Ystyqkol had a great deal more water and the Uzbay river issuing from it flowed into the Caspian. It is said that one branch of that river was the Amu-Dariya. We know about the story of how Alexander of Macedon (Zulqarnayyn), at the time of the nomadic peoples living in the area, stopped his advance there and pulled back his armies. Be that as it may, we have discovered from

the ruins of a city found near the Ystyqkol that our ancestors farmed the land. The conclusions from this are: it is certain that 2,500 years ago, our ancestors, in addition to leading a nomadic life, had begun to go over to a sedentary existence as well. It is true that the famous Saka emperor Tomirist (Tumar) was moving in this direction. It appears that he later made the houses built there into his capital. The city in that ochre plain, called Chingu, occupies the place of a Troy in Central Asian archaeology. This is so because this was a flourishing city existing 3000 years before our era.

We make reference to history here because we are attempting to overcome the view that the people of Central Asia, the Kazakhs among them, have been nomadic since ancient times, and that sedentary life was something taught them by Europe. At the same time, there has accumulated since ancient times a great deal of experience with mastery of irrigated lands. If the present state of the peoples of Central Asia and Kazakhstan, who have agriculture in their blood, is poor, it seems that it will be still worse in the future. For this reason, as various incidents and economic difficulties come to the fore in our country in growing numbers, we now have a responsibility towards future generations. Opening our souls to the Aral tragedy, adding our voices to the clamors of the journalists, of poet-writers, this is our goal as we express the hope that we might be of some small help. My countrymen, let us not forget from where and how our bread is produced as we sit wrapped up in ourselves. Let us not forget as we sit in our warm houses and offices the land reclaimers who work tirelessly for an abundant harvest, digging canals, preparing the land in the steppe out in the frosty wind biting at their faces. They are no topic of ordinary conversation. However, it may be that we have no need for a Ministry of Land Reclamation and Irrigation in our republic today. In its place we should organize a concert.

It is realized that during the years of stagnation the Ministry of Land Reclamation and Irrigation too made many errors. Who did not make errors in those times, you might ask? But be that as it may, we must understand that responsibility towards future generations does not mean sitting and twisting our hands. Not just ourselves, also American scientist P. Miklin, from the other side of the world, as an expression of his compassion and citizenship, has made known in his report to the VI International Congress held in Ottawa (Canada) many facts connected with the Aral, and has made many valuable suggestions to our scientists and writers, worth taking as models and putting into practice. The essence of what he said is this: "Water resources in the Soviet Union average 47,000 cu km a year. It ranks second to Brazil in this regard. However, 84 percent of these waters are located in little populated, economically little efficient Siberian portions of the Soviet Union. Some 16 percent of the Soviet population is located in the south, and some 75 percent in the west. They produce more than 80 percent of agricultural products. But water is in very short supply in these areas. Since M.S. Gorbachev

has come to power, he has been forced to halt the project to divert Siberian waters. The reason is that construction of the project will require a great deal of capital. Also discussed have been previously forgotten economic, ecological and social effects of diverting the rivers. At least 95 billion rubles of financing will be needed for the renewal of the mastery of new lands for the Soviet Union in accordance with current conditions. In addition, there is a water shortage in the southern areas. Leaving aside the question of the errors of the facts and figures of S. Zalygin, editor of the famous magazine NOVIY MIR, we must even say that there are shameful things far from the truth, based on pure imagination. Thus, the 90 year water problem of the Soviet Union is not just a matter of water shortage, a complete political and social change is needed as well."

We have been suspicious about Foreigners up until recently. We have taken pride that only our nation is right. Now times have changed, humanitarianism is something native to us all. When an American professor from the other side of the world has opened his soul to the Aral, how can we not raise our voices as we see clearly the Aral vanishing before our eyes. In addition, since we live in our highly populated capital and in other fertile oblasts of Siberia, it would seem that we have a right to 7 percent of Siberian water.

These days our republic's leader, Nursultan Abishuly Nazarbayev, has been saying a great many grand words from the podium about the special nature of the Kazakh economy, and about going over to self-management. We support him completely. We hope that this issue will be settled. But if the water problem is not solved, our economy will not be able to develop energetically. No life is possible without water. But water alone will save the Aral. For this reason we say again and again in answer to the question of whether or not Siberian waters should be diverted, that we not only should do so, but we must do so...

Author Scores Perceived Inaction on Aral Sea, Central Asian Water Crisis

90US0690A Moscow NOVYY MIR in Russian
No 1, Jan 90 pp 201-206

[Article by Grigoriy Reznichenko: "Responses and Commentary: Not Even One Additional Glass of Clean Water"]

[Text] In September of 1988 during the days of the "Aral-88" expedition, which was organized by the NOVYY MIR and PAMIR¹ journals, the CPSU CC and USSR Council of Ministers approved a resolution regarding the Aral Sea. It is entitled: "On Measures for the Radical Improvement of Ecological and Health Conditions in the Area of the Aral Sea; for an Increase in Utilization Effectiveness and for a Strengthening of the Protection of Water and Land Resources in its Basin."

By that time perestroika was already three and a half years old. The resolution, however, as has now become apparent, was prepared and approved by a narrow circle

of administrative workers and specialists just like in the old pre-perestroika days. The governmental commission worked for a long time, more than a year. Once again, though, its work was carried out in the old, tried and true pattern: from meeting to conference. If there was a shortage of something, it was not talk. However, the proposals and opinions disappeared in the sand. Apparently, because the commission worked almost in secret. Later the commission's chairman, Yu.A. Izrael stated to a PRAVDA correspondent in conversation, "We consciously avoided publicity about our work."

My last trip to the area around the Aral Sea in September 1989 was connected with the second session of the Aral movement and an on-site analysis of the situation.

What kind of changes had taken place in the year since the CC and Council of Ministers' resolution had taken effect? We studied this problem on location and discussed it with those who were called upon to carry out the resolution and with those for whom its implementation would be a life-saving reprieve from approaching destruction.

At the lower levels the resolution of the party and the government on the Aral Sea was perceived like the arrival of summer in the north - with holiday spirits. The Karakalpakiya and Kzyl-Orda party obkoms gave it a high, perhaps too high an evaluation. The special tenth session of the Uzbek SSR Supreme Soviet (eleventh convocation) noted, "The resolution of the CPSU CC and USSR Council of Ministers is a document of enormous political, economic and social significance, an illustration of the concern of the Communist Party and Soviet state about an improvement in the ecological and health situation and an improvement in the social and day-to-day conditions of life of the population." And they went on according to the old, hackneyed routine, "In recent years a certain amount of work on the future strengthening of the region's economy has been completed, the implementation of a number of water conservation and land reclamation measures has begun in the area of the Aral Sea and the basins of the Amudarya and Syrdarya rivers..." "For the already completed twelfth five year plan annually there were 1.4 - 1.6 times more per capita capital investment devoted to these objectives than the average level throughout the Uzbek SSR..." "Nonetheless, the Uzbek SSR Supreme Soviet notes that the Soviet and economic organs of the republic allowed serious miscalculations in the utilization of water and land resources of the Aral Sea basin..." And so on, and so on.

It is not difficult to determine today's ecological, economic and social situation in the Aral region by looking at any two or three cities, villages or rayons in this region. A year has gone by since the resolution was passed. Has anything changed for the better, for example in Aralsk? Perhaps, there are more vegetables in the stores, or more milk for the children? Nothing of the kind. As before, there is a serious shortage of medicines for the sick. As before, the local inhabitants rush to the restaurant cars of passing trains, but not in search of

delicacies. They would be happy to find a bottle of normal lemonade, a package of cookies, a handful of caramel. But the car attendants rudely push them off the steps of the train. Within the city limits twenty-nine stagnant, foul-smelling lakes offend passers-by with their stench. The local authorities simply do not have the resources to get rid of them. The republic and the Union, though, have turned their backs on the people's grief. There has been no increase here in the amount of available drinking water: one bucket a day per person. Kazalinsk lives in a fearful and poverty stricken state. Muynak searches agonizingly for a solution to the deep food and ecological crisis.

There are all kinds of slogans and billboards in Muynak. At the fish canning enterprise group, which uses fish trucked in from the ocean, the level of "billboardization" as in the center of town is unusually high. A gigantic and colorful wall panel in one of the shops tells about the infinitely happy life of the people of this kray. In huge letters it reads, "XXVII CPSU Congress. Glory to the great Soviet people- builder of communism!" In the city itself in letters almost a meter high the sign reads, "Thank you, Motherland, for our happy and joyful childhood." This is at a time when almost 100 newborn babies die before the age of one for every 1000 born. Even after one year death follows on their heels. In Karakalpakiya 73 out of every 100 people are sick. (By the way, it was namely in the Aral area that our country officially registered its first "ecological death.") At the cemetery in Muynak we discovered dozens of small children's graves. People drink contaminated water. There is no other kind available. A bottle of mineral water in Muynak is extremely expensive, if, of course, it is delivered at all. Vodka gets delivered but water....every now and then.

The recently declassified city of Leninsk, the city of the builders of the space center, Baykonur, and those who run its operations, was added to the list of cities which have suffered ecological damage. I first learned about the unfavorable ecological situation in that city from a telegram to the editors signed by Deputy Chairman of the Gorispolkom Stanislavich and Chairman of the City Council of War and Labor Veterans Setekin:

"The Syrdarya River has become dangerous for people as a source of infection. It is impossible to swim, fish or use the water. The river's flow is at its lowest level of the past 30 years. The government's decisions on the Aral Sea are not being carried out. Public attention and support for us are needed to solve this problem; perhaps a public commission on the problems of the Aral Sea could examine our problems again.

So it turns out that nothing has changed anywhere. During the entire year the supply of clean water did not increase by even one glass. Life flows quickly, and like a flywheel, it has been wound so tightly by the administrative-command system that nobody is capable of either stopping or slowing its forward motion.

As recently as one year ago during the two-month expedition, I believed that the Aral Sea could be saved. The basis for my optimism, strangely enough, was the unimaginable, flagrant scale of economic incompetence. It seemed that it would be impossible to close one's eyes to the existing economic disintegration and to reconcile oneself to it. So I thought that we would overcome the economic incompetence, set things right in the economy and save the Aral Sea. Simple? Nothing could be further from the truth. Economic incompetence definitely does not lend itself to eradication under the conditions of our present social- political and economic system. On the contrary, it is growing and multiplying. As life itself has demonstrated, when absolutely everything belongs to the state and, therefore, to nobody, there is no responsibility and incentive. As the satirist noted, "you pretend to pay us a salary and we pretend to work." Economic incompetence and wage-leveling in a system of state ownership have lead us to indifference and cynicism which is devastating not only for the economy but for the environment as well. Because of this the Volga and Dnepr rivers, the tundra and taiga, the steppes of Kalmykiya are dying; Kemerovo and Magnitogorsk, Berezniki and Zaporozhe are suffocating. If not today then tomorrow the areas around the Caspian Sea, which may choke to death on hydrogen sulfide, will ask for help. But right now we are talking in concrete terms about the Aral Sea and its environs, about the expansive delta region of the once powerful rivers of Central Asia, the Amudarya and Syrdarya where the habitat has become unsuitable for life. The leadership of the oblasts in the area near the Aral Sea, Karakalpakiya and Kzyl-Orda, have undertaken and are undertaking every possible effort to correct the situation but their efforts are obviously not enough. People's lives have become unbearable in this kray which flourished for so long.

Who then is supposed to save them? The republics of Central Asia, the entire USSR or mainly the central authorities? This question arises constantly, first of all, among those who are suffering ecological troubles today. It is difficult to give a simple answer to that question. But nonetheless...

The main responsibility for saving the Aral Sea apparently lies with central government since it is the one who for many years encouraged the activities of the central agencies which was devastating for all living creatures. In doing so, it contributed to the growth of the ecological crisis. And who, if not the government, should answer for the efficacy of resolutions which it passed on its own!

And what about in practical terms? For five years at all levels people have been talking about a reduction of cotton production and the transfer of land to orchards, vineyards and livestock production but there has been no movement. In Karakalpakiya this year there are plans to free 27,000 hectares of land previously devoted to raising cotton (16,000 hectares of land devoted to rice). The percentage of cultivated land devoted to cotton production in Central Asia continues to reach levels which are unheard of in the world; 70-75 per cent

although it has been proven by science that levels over 50 per cent lead to a loss of humus, soil depletion and infertility and finally to degradation of the land.

The resolution states that in 1990 the Aral Sea will begin to receive 8.7 cubic kilometers of water, by 1995 11, by the year 2000 15-17 and by the year 2005 21-25. For the Aral Sea this is like applying hot compresses to a dead person since 33-36 cubic kilometers of water evaporate from its surface in a year. Simple mathematical calculations will confirm that by the year 2005 180-200 cubic kilometers of water will be left in the Aral Sea. By that time and with such a program for its "salvation" the sea will separate into several reservoirs with bitterly salty, poisonous water and will perish completely. The Aral Sea will die and Central Asia's natural "oven" which neutralizes the action of the cold, northern winds will also disappear.

Incidentally, that insignificant amount of water for the Aral Sea which was established by the resolution will reach it only in the ideal situation if 3.3 million hectares of land formerly under irrigation are reconstructed and several hundred thousand hectares of new irrigated land are taken care of from 1990-2000. That is hardly possible. On the average that is 300-330 thousand hectares per year. New development of these lands is less energy and material-intensive but even during the best years in Central Asia only up to 200 thousand hectares per year were developed. However, these lands have not produced anything yet and have not been taken into consideration by anyone. They are only being introduced into usage and the land which is to be redeveloped at least is producing something. Maybe only 15 centners of cotton per hectare, but that comes to 300 thousand tons per year. Last year they essentially did not get around to starting the reconstruction process. The existing over-centralized system of management in which the allocation of lumber and nails, shovel and hammers is carried out through the central authorities has hindered and will hinder any transformations.

The resolution states that in order to find surplus water for the dying sea it is necessary to decrease the development of new lands by 160-170 thousand hectares by 1990. That year has already arrived. The figure, in essence, has not changed. If appropriations from the state budget for this work are reduced, that means that the resources for them will be found in the budgets of the collective and state farms.... In the Khorezmskaya oblast, for example, they continue to develop new tracts of land for cotton production in areas of impassable sand. Planting soil is specially shipped in and then the water is pumped in...The edge of Siberia, as one of my acquaintances says. After this there is no where else to go!

As recently as last year surplus water volume was supposed to have been available for the Aral Sea as a result of the measures stipulated in the resolution. They weren't there! Just as there has not been any surplus water in the last decades, there is still none. A miracle did not occur and apparently could not have occurred.

Because the resolution itself was adopted under pressure from the Minvodkhoz [Ministry of Water Resources], to satisfy its own wishes, practically at its command. After all, we are talking only about the correction of "mistakes" which were committed by Minvodkhoz. Nothing more than that. The person who has money is the one who requests the song. Minvodkhoz-Minvodstroy [Ministry of Water Resource Construction] dictates how people in the Aral Sea area are to live (and others as well) because it receives annual billion-ruble subsidies from the state and feels omnipotent. The government commission, on the other hand, simply was led around by powerful agencies on a leash and did not undertake radical steps.

Why not, for example, turn over, let's say, half or a third of the land to the peasants of Central Asia. Over the course of centuries irrigated agriculture has existed here and the catastrophic scale of the salination and bogging of the land became possible only in a system of collective and state farms. Today in Uzbekistan 2.6 percent of irrigated farm lands are in the hands of the peasants yet they provide a quarter of the total food in the republic. And a similar economic miracle has been going on for years. Why delay? Why persuade milkers, foremen or farm managers to tell people on television how good the collective farm system is and how the collective farm system has yet to realize its full potential.

In Central Asia people often tell stories about the mirabs [Central Asian irrigation specialists] with admiration. These were men who truly cared about their work, strong and intelligent, at times clever and tricky but who knew their business. The mirab's individual land allotment was usually located at the end of the water distributor. The mirab whose fields either dried out or became boggy was considered incapable. (In the history of agriculture such an occurrence was a rarity.) Maybe, that is why they lived well, these mirabs? In the 1930's they were equated with kulaks and exiled to Siberia. Old people today still recall the wheel with buckets (chigir) lowered into the irrigation well. The mirab knew how many times the wheel needed to turn so that the correct amount of water spilled onto the field and no more. But nowadays, there are no mirabs and no measuring of the water. "Everything around belongs to the collective farm and everything around belongs to me."

But let's return to the resolution. It directs, "Beginning in 1991 the development of new land in large tracts will cease." So what. That means they will begin to develop the land in small tracts but on the same scale.

The resolution proposes very timidly, but proposes nonetheless to reduce plantings of cotton. After all, the Aral is a sea that has been consumed by cotton more than anything else. But even this proposal is not taken seriously. In summing up results in 1988, it turned out that 23 thousand more hectares of cotton were grown than called for by the plan. Naturally, the issue is not cotton in general (the country needs it), but rather how much can be grown here. It is also about whether it is wise to use 2

million tons of it every year for technical purposes. This level has not been reduced at all which leads to a loss of 12 cubic kilometers of water per year. Should not this kind of situation be considered and analyzed by a government commission devoted to saving the Aral Sea? It should be but it hasn't been looked at. Measures to prevent the filtration of water in canals and irrigation systems (their length in Central Asia has reached 180 thousand kilometers but only 15 thousand of them have antifiltration coverings) also have not become a subject of discussion and have not earned the commission's attention. The works of the scientist, V.V. Mkhitoryan and the group of specialists who elaborated a methodology and created models of experimental machines which place a clay or polymer screen on the filtration path have remained unnoticed. In one hour 300 square meters are insulated. During the course of ten to fifteen years the "Ekran" machine's work could have saved no less than 20-25 cubic kilometers of water. In addition, the canals and irrigation rigs would have remained in working order and they would not have had to have been stopped; that is the essence of the screen system's technology. A number of countries have already proposed to acquire a license for this machine. But the inventor still refuses and has not agreed to its sale. After all, he believes, then these machines would have to be purchased abroad for hard currency. A paradox?! We still do not have either in Central Asia or in another arid zone an experimental field for testing this equipment even though the machine made its appearance over eight years ago. There is no money and nobody to finance the experiment or the mass production of the machine. On the other hand, there are resources enough for laying irrigation pipe and digging canals with dirt or sand bottoms.

Too many of those things which could have radically improved the ecological situation in the area around the Aral Sea were ignored by the government commission which prepared the draft resolution. Even the extremely critical problem of the Tashauzskiy by-pass canal was not noticed. The problem is multinational in nature, explosive and came about as a result of the political games of high party officials.

Water allocation along the border has strained national relations in Central Asia on a number of occasions. Passions were inflamed at one time because of the canals from the Amudarya River to the Tashauza. Turkmeniya had been soliciting the construction of its own separate canal to by-pass, or more accurately, to go around the Khorezmskaya oblast over the sands. The former First Secretary of the Uzbek Communist Party's Central Committee Sh. Rashidov was not the only one to object to this. Also objecting were specialists who showed that almost half of the water would be absorbed by the sand. Then the time came for developing the Karshinskaya steppe, lands located above the Amudarya River which contained coarse, gravelly soil. But then the former First Secretary of the Turkmen Communist Party's Central Committee M. Gapurov came out against the project.

The irrigation drainage water, polluted by poisonous chemicals threatened to find its way unhindered into the Amudarya River. In addition, according to calculations water losses would have been significant. (That is what finally did happen.) M. Gapurov objected to one Minvodkhoz project; Sh. Rashidov to another, also being pushed through by Minvodkhoz. But then all of a sudden both agreed to the plans. Each decided that his objection was not substantive...How did that happen, I wonder?

The Karshinskiy tracts of land, where there are a multitude of unprofitable farms, were developed and the construction of the Tashauzskiy canal, of which 140 kilometers are dry, is being completed. Already many kilometers of the canal once again have been filled in by sand. All right, they will dig out the sand. But specialists say that when the canal is filled with water, it will create a head for the underground water flowing in the direction of Karakumy which, if it rises, could destroy the foundations of the unique, ancient monuments of Khiva. If that happens, who will guarantee that people won't grab their hoes and go to fill in the Tashauzskiy canal?

The Aral Sea is dying. During the past year the level of the sea fell by almost a meter. This once again confirms the fact that the governmental commission, alas, has not found a serious concept for the salvation of the Aral Sea and its environs. Namely, a concept and not self-seeking departmental decisions.

The TED (technical-economic report) is only now being reviewed. Then a review of the TEO (technical-economic substantiation) will follow. Then the drafting process. There are proposals in the TED which view the creation of two Aral Seas at the edge of the cities of Aralsk and Muynak. Probably one can assume that Minvodkhoz-Minvodstroy will create protective dams on the sea side of Aralsk and Muynak and will fill these artificial reservoirs with water. Or rather not with water but a poisonous compote consisting of one half irrigation drainage water.

If the government commission was successful in doing anything, it was including in the resolution the requirement for the construction of new water lines. As we know, only one person in ten drinks more or less normal tap water in the entire area around the Aral Sea. This will not be carried out anyway though. Out of the twelve union ministries which according to the resolution are supposed to allocate money from their budgets for the construction of waterlines, not one has come forward with a single kopeck yet.

In Nukus the local authorities, inspired by the resolution, created Aralvodstroy [Aral Water Resource Construction] without hesitation. People were found to work as was equipment and, of course, a good-sized organization appeared. But what is a construction organization without funds? (Especially since the local construction industry base is weak.) There is no cement, metal, gravel, lumber or sand. The governmental decision exists but it turns out that it is impossible to carry out. Of course,

some of the work, mostly excavation, was somehow managed through financing; they cannot just sit around idly. But in this work there is little which was specified by the resolution.) In this case what is the value of a decision like that?!

In March 1986 before the latest resolution on the Aral Sea was issued, the government approved the resolution, "On Measures to Accelerate the Economic and Social Development of the Karakalpakiya ASSR." A similar document also came out regarding Kzyl-Orda. One and a half years later another resolution was issued; on the nonfulfillment of the previous two. "During 1986-1987 4.5 km of sewage and 2.6 km of heating pipe were laid in the city of Nukus, or 14 and 18 percent compared to the five year plan assignment. The UzSSR gosagroprom did not fulfill the plan regarding health services and cultural-welfare facilities. The UzSSR Gosstroy [State Construction Committee], using state capital investments, built 31.4 thousand square meters of living space while the plan called for 128.8 thousand, or 24 percent." So there it is; 14-18 percent, or in the best case 24 percent of what is planned is actually completed.

Resolutions of the USSR Central Committee and Council of Ministers ceased to function properly a long time ago; they have stopped being documents whose instructions are considered mandatory because they do not come with adequate material support, because too many resolutions are adopted and because our bureaucracy learned long ago without great difficulty or harm to itself to work around these resolutions...

Unfortunately, not much is going to change in the region even if the unimaginable occurs and everything planned by the government commission becomes a reality. Perhaps the agony of the Aral Sea and its environs will be prolonged a bit. After all, this document is only the first step. But will there be a next?

According to scientists' calculations, correcting the situation in the Aral Sea and its environs would cost no less than 30-35 billion rubles. Our government obviously cannot afford these kinds of expenditures right now.

The central authorities and their agencies who exerted considerable effort to cause an ecological catastrophe in the Aral Sea do not have either the resources or a serious desire to eliminate its consequences.

Then why doesn't our government request aid from the international community? Or should our other institutions and public organizations do this?

Six months earlier American writers and journalists from the NATIONAL GEOGRAPHIC MAGAZINE, BBC television and a journalist from Stockholm finally were able to get through. But at the same time higher authorities, showing concern for our security, did not allow two journalists from the French magazine ACTUEL to come to the Aral Sea and after that blocked the representatives from Holland from arriving. The Americans William Ellis, Phillip Micklin, David Ternly,

the English citizens Jane Corbin, Dzhanfranko Norelli and the Swede Peter Nilson will bring to the attention of the international public their and our alarm and pain over the Aral Sea.

However, even if the world does respond to this trouble, what is important to us are our own actions. Saving the Aral Sea and the restoration of its environs must become a kind of test for our present government, a test of its decisiveness and consistency in the matter of improving the entire ecological situation in the country.

Footnotes

1. Upon completion of the Aral expedition, we related on the pages of this magazine about how the Aral region suffers from a serious ecological malady and how the Aral Sea has turned from a body of fresh water into a dead, salt water sea which is drying up at a catastrophically rapid rate (see NOVYY MIR, 1989, No 5).

Wave of Radioactive Source Mishandling Incidents in Ashkhabad

90US0709A *Ashkhabad TURKMENSKAYA ISKRA* in Russian 27 Feb 90 p 2

[Article by TURKMENSKAYA ISKRA correspondent K. Mirakova: "Around Accidents. Radiation Safety: Is It Really Safe Today?"]

[Text] Last year in Ashkhabad there were 26 radiation-related accidents. However, the chief physician of the city sanitary-epidemiological station, I. A. Orazov, is calm. He assures us that the radiation situation in the country is all right.

However, for the present day, 14 organizations in Ashkhabad require extraordinary attention, since the loss of radioisotope instruments has been discovered there, and this is included in the notion of a radiation accident.

This topic was acutely and heatedly discussed at the meeting of the republic's Committee for People's Control held on 13 February. Moreover, the question was raised of identifying the organizations who are at fault, who have discarded radioisotope instruments and sources of ionizing radiation beyond the boundaries of their territories. These were discovered by Krasnokholmsk party ecology detachment No 1, which had come from Tashkent in October of last year.

The radiation situations which were discussed were the manifestation of more than just a casual, ignorant and

irresponsible attitude toward questions of radiation safety on the part of the enterprise administrations and the Ashkhabad city and republic sanitary-epidemiological stations, as well as the Ashkhabad gorispolkom UVD [Internal Affairs Administration].

Engineer-Physicist V. A. Paramonova of the Ashkhabad city SES [sanitary-epidemiological station], at whose request the meeting was held, believes that the reason for the serious omissions in the work of the radiological services may be found in the approach to radiation-hygienic problems which has been formulated in the republic, the organization of work in radiology groups, and the attitude toward the cadres.

The Committee for People's Control gave a synonymous evaluation of the work of the city and republic SES and their leaders. I. A. Orazov was issued a strict reprimand, and B. Charyyev received a reprimanded.

Will this help matters? Judging by the complacent attitude toward the radiation situation in the republic SES, the city health department, and the departments of the TuSSR Minzdrav [Ministry of Health], there is no reason to hope for any changes soon.

Why? Because even now there is a veil of secrecy over the work of the city's radiological groups. Journalists are presented with facts which depict the state of affairs only in rosy tones. In order to ensure that the "sensational" (read—alarming) information does not leak out, very strict subordination has been established within the group. Literally every step must be coordinated with the management. Any living thought, any desire to fulfill the prerequisites in other than an unthinking manner, to analyze and seek out the reasons for the radiation leaks, is categorically prohibited.

Today, we believe, in the heat of departmental ambitions multiplied by the elements of incompetency, many have forgotten the danger of experiencing a mini-Chernobyl in Ashkhabad.

The problem of radiation safety and effectiveness of application of sources of ionizing radiation (SIR) and radioisotope instruments (RII) has been raised by people's control because it is already apparent, while its resolution in the sanitary-epidemiological stations, the internal affairs administration and the organizations has followed an incorrect path.

Yet the signals that such a problem had arisen in the republic were not isolated incidents.

In 1976 at the airport, children discovered abandoned lead containers in which there were ampules with liquid radionuclides. They had been intended for the Turkmen Scientific-Research Institute of Oncology. The children broke the ampules, but fortunately suffered no ill effects from them.

In 1982 the uncontrolled find of a radiation pack on the territory of the TNII [Turkmen Scientific-Research Institute of Oncology] led to an incident in which one of

the institute patients removed a motor from it and some other "warm object", which he threw in the bushes. Then a young man who had come here to visit a relative picked up this same object. However, he did not hold on to it for long—it burned his fingers. This young fellow suffered radiation burns on both hands, which subsequently had to be amputated. An echo of this same accident was the case of the doctor-oncologist who had the fingers of his right hand amputated last summer.

What conclusions were drawn after these extraordinary occurrences? None. Therefore, another radiation incident occurred in February of 1989 at the TNII Oncology. A worker threw into the trash a container with 238 vials containing residue of liquid radionuclides. This led to exceeding the natural background by... 10,000 times. All the vials were discarded without preliminary dosimetric measurement or adherence to the required standing time in the sediment tank to ensure loss of activity. Further investigation of the institute showed 6 more violations, which proved the casual attitude on the part TNII Oncology administration toward the accounting, transport, and transfer of ionizing radiation sources and radioisotope instruments to other organizations.

The need had arisen for conducting sanitary-enlightenment work with the managers of enterprises and militia workers on questions of radiation safety. The most convenient form for this would have been the seminar-conference, which is what V. A. Paramonova proposed. However, it never came to pass.

Yet violations were being uncovered as before. Abandoned radioisotope instruments were found at the city dump, while at an unused storehouse of the Deserts Institute, the loss of 256 radioisotope smoke detectors was discovered.

What is the reason for these accidents? We believe it is the formulation of the question of radiation safety in the organizations and in their controlling organs—the SES and UVD. The chain of their interconnections has been broken, beginning with the moment of preventative sanitary supervision.

For a number of years, the managers of the AshgorSES radiological group N. Kurbanov and I. Redzhepov totally ignored the question of keeping an accounting of radioisotope instruments, and therefore in their routine work they did not utilize information on the delivery of these instruments to Ashkhabad enterprises from the departments of the all-union association "Isotop".

A formal approach is observed also in formulating request orders. In 1984, S. M. Karayeva, who was at that time the chief physician of the city SES, submitted a request order to receive 5 gamma-detectoscopes for the PMK-1 "Utkrmengazprom", without evaluating the possibility of placing them in special storage facilities. For its part, the UVD, blindly trusting the signature of the city's chief physician, also signed the document without verifying the true state of affairs at the special

storage facilities, their equipment, and the working order of their signalling mechanisms.

As it turned out, there were no free storage tanks available. As a result, two radioisotope instruments were stored at the general warehouse, while the rest were handed over to another organization, and the SES was not informed. This is how the uncontrolled migration of radioisotope instruments is being practiced.

The SES and UVD, already at the stage of preventative supervision, are laying the groundwork for a possible emergency situation. This facilitates and causes a formal approach to the implementation of current sanitary supervision in the future. Once organizations have received radioisotope instruments and sources of ionizing radiation, they do not independently initiate accounting and do not file a report when this equipment is written off.

Judging by the documents approved L. N. Saytakova, the chief of the radiology department at the republic sanitary-epidemiological station, she was aware of the violations which have now been uncovered by people's control in Ashkhabad. However, Lyudmila Nikolayevna believes, since "there is no AES or institutions producing radioactive isotopes under the supervision of the radiation service, the city sanitary-epidemiological station

ensures complete control over the facilities". Perhaps this sense of calm is the basis for I. A. Orazova's complacency?

Today we face the problem of tracking down the radioisotope smoke detectors which were lost as a result of lack of accounting. And although this extraordinary occurrence threatens to turn into an emergency with serious consequences, L. N. Saytakova is not worried about the lack of accountability. Otherwise, how can we interpret the fact that the question of mandatory accounting of radioisotope smoke detectors was at her insistence removed from discussion by the people's control?

Who, then, will ensure our radiation safety, and how?

New Ecological Journal Published

*LD2304082290 Moscow Domestic Service in Russian
0700 GMT 23 Apr 90*

[Summary] EKHO [Echo], a journal of ecological glasnost, went on sale for the first time today. The first issue carries a report from the sealed zone around Chernobyl. Other items deal with the problems of the Gornyy Altay and the burial of radioactive waste. The journal will be published every quarter. Each issue costs R3.

EUROPEAN AFFAIRS

Third North Sea Pollution Conference Viewed

Conference Issues Previewed

90EN0441Z Rotterdam NRC HANDELSBLAD
in Dutch 5 Mar 90 p 3

[Article by F.G. de Ruiter: "Primarily Britain in the Dock at Ministers Conference"]

[Text] The Hague, 5 Mar—The North Sea, heavily travelled, fished, and explored for mineral resources, serves at the same time as a garbage dump for Western Europe, but there are also two East European countries that take advantage of this inadvertent function: Czechoslovakia and the GDR. By way of the Elbe, they too contribute to the pollution of the marine environment, through which fish are contaminated. As a consequence, both countries are represented for the first time at the North Sea Conference, which is being held Wednesday and Thursday in The Hague, chaired by Minister of Transport & Public Works Maij-Weggen, the goal of which is to cut back on pollution.

However, the East Germans and the Czechs still have the subordinate status of observers. It is expected that they will act as full participants at the next ministers conference, probably in three years. That is already true now of Switzerland, where the Rhine—also a source of contamination—originates. The mountainous land is joined by the eight "traditional" North Sea countries: Great Britain, France, Belgium, the Netherlands, the FRG, Denmark, Norway, and Sweden, which borders on the Skagerrak.

Of these eight, it is England that has traditionally been the troublemaker, the "dirty old man" more likely to slow down than encourage a cleanup of the North Sea, and the only one that continues to dump enormous quantities of industrial waste, including chemicals, into the sea. In this position, Great Britain is supported, tacitly or otherwise, by France, while Belgium as well still shows little interest in a clean sea. The Netherlands and the FRG adopt a reasonable intermediate position, while the Scandinavian countries are the most insistent on a major cleanup. However, in one regard this is an easy position for them to take: There are no significant rivers there that flow into the North Sea.

That is basically how things stand on the eve of the third ministers conference, following the failure in Bremen in 1984 and the dubious success of London in 1987. The 1987 agreement stated that dumping industrial waste into the North Sea would end by 1 January 1990, but England continues with business as usual. In so doing, it refers to two loopholes in the agreement: Dumping can continue if it can be demonstrated that there are no alternative processing options on land and that the waste is not harmful to the marine environment.

The Netherlands and the other North Sea states feel that England is wrongly taking advantage of the provisions in question. As host at the conference in The Hague, Maij-Weggen informed her British colleague, Chris Patten, of this joint criticism. This was followed, at the end of last week, by the report that England will halt dumping by 1 January 1993. Aside from the fact that two major chemicals companies are exempted from this (ICI and Sterling Organics, which together account for around 200,000 tons of chemical waste a year, are granted a respite until mid-1993), the measure is three years late. Nevertheless, the Public Works calls it a "pleasant surprise," and that is illustrative of the benevolence with which the British are being welcomed to the negotiating table.

And as far as England is concerned, that is not all. That country (again, the only one of the eight) routinely loads sewerage sludge from treatment plants into lighters and dumps it into coastal waters: a cargo of 5.5 million tons a year in the North Sea alone. Viewed against this background, one begins to wonder whether the United Kingdom is actually favorably inclined towards the so-called precautionary principle. That was the impression gained at the end of the 1987 conference. England had supposedly abandoned its "belief" that dumping and discharging could go on until nature provided proof that there are limits to her self-cleaning capacity. But two and a half years later, that view still appears to be in force.

Still, some of the other countries as well are far from spotless. Maij-Weggen recently attacked France, which in her opinion is playing a "disappointing role" as far as cleaning up the North Sea is concerned, while Belgium is doing little or nothing to release the Schelde from the odium of being the "dirtiest river in Western Europe."

And the Netherlands? Near Scheveningen, there is still a pipeline feeding into the sea, spewing out around 250,000 tons of sludge from the Houtrust sewerage treatment plant each year. Even though this is scheduled to stop by 1 May, since the district water board will then be allowed to store the mass in the sea inlet by Oostvoorne, the point remains. Moreover, the Dutch contribution to the eutrophication (overfeeding) of the North Sea, with the accompanying proliferation of algae, is not insignificant, since the Rhine is burdened with an overabundance of nitrates and phosphates, largely from slurry and artificial fertilizer.

According to the agreements, the dumping of these nutrients should be reduced to half the 1985 level by 1995. In the case of phosphates, this will presumably be possible, but nitrates require extra agricultural intervention in order to achieve the desired goal. With no change in policy, the farthest that one will get is minus 30 percent. A 50 percent reduction in dumping was also agreed to for 39 other heavy metals and chemicals that end up in the North Sea via rivers, but these "top-priority substances" constitute only a fraction of the actual number.

Various chemicals also taint the North Sea from the air, in some cases significantly more so than through water, so that route too must be taken into account when considering a major cleanup. If the Netherlands has anything to do with it, atmospheric emissions of 17 substances will have to be reduced by at least 50 percent by 1999, and according to Public Works an agreement in principle with the partners has already been reached on this point. Here as well, a great deal of trouble comes in with the prevailing westerly winds from England, including sulfur dioxide from the British coal-fired power plants. Of the feared PCBs that affect the marine environment through the air, 60 percent comes from England.

Another form of pollution to which attention is being given at the conference in The Hague is the discharge of fuel oil, to which large numbers of sea birds regularly fall victim. According to the North Sea Working Group, a cooperative association of various environmental groups, an average of 700 tons of oil is discharged into the North Sea each day; every 64 days, that equals the amount released by the Exxon Valdez in the big Alaskan oil catastrophe. These are often intentional discharges, "under the cover of night"; others are due to accidents or extreme negligence.

An example of this was the Borcea affair, the Romanian tanker that in early January 1988 lost around 350 tons of fuel oil off the Zealand coast due to leakage; this resulted in the death of 10,000 to 15,000 sea coots, eider ducks, and grebes. On 12 March—thus, shortly after the conference—the captain of the Borcea is scheduled to appear before the Rotterdam court, but it is still unclear whether he will be sentenced. If it turns out that the ship sprung its leak outside the 12-mile territorial waters, then the jurisdiction of the Netherlands will be drawn into question. In that case, the captain in principle should appear in the country under whose flag the ship was sailing, in this case his own country, Romania.

In order to avoid this type of imperfection in the future, it was—again—proposed that so-called exclusive economic zones (EEZ) be established, through which national legislation applies to the open seas as well. The boundaries of these zones could correspond to those of the continental plate. Norway and France already recognize this type of EEZ, but now the intention is to divide up the entire North Sea in this sense. The Netherlands is accorded a pioneering role in this.

Furthermore, the FRG in particular is pushing for declaring the North Sea a "special area" within the framework of the MARPOL agreement prohibiting operational discharges by ships. In that case, there would be much stricter standards applicable on the North Sea to pumping used motor oil overboard and to disposing of chemicals while cleaning tankers. At any rate, the German proposal failed in Bremen in 1984 and in London in 1987.

In the meantime, drilling platforms have gained a steadily worsening reputation in connection with their discharges of oil. The offshore industry on the North Sea, once again a primarily British matter, has even become the greatest polluter in this sector. The amount of sludge that it expels together with sea water was estimated in 1987 at 60,000 tons. Around half of that was released through small accidents and leaks on drilling platforms. According to the 1987 agreements, this type of pollution was also supposed to be subjected to limits, but it remains to be seen—this week in The Hague—whether it actually was.

British Attitudes Scored

90EN0441Y Rotterdam NRC HANDELSBLAD
in Dutch 9 Mar 90 p 2

[Commentary by John Kroon and F.G. de Ruiter: "Disappointment, Irritation, and Dismay"]

[Text] The Hague, 9 Mar—Two days of conferring on the North Sea have reaffirmed more than ever the United Kingdom's characterization as the "dirty old man." The British minister for the environment, Patten, must have gotten the impression that the others preferred to hold their noses when he walked past.

In any event, following the conference, which ended yesterday, they—his fellow ministers from the other North Sea states—gave vent to their bitterness about the British attitude, which had resulted in a watered-down declaration and moreover yielded an exceptional position for the British in a number of areas, which will clearly not be beneficial to the marine environment.

While Minister Maij-Weggen, as host and chairman of the conference, adopted a much more neutral tone about the British attitude than she had previously done—"we are all a little disappointed," she admitted—others were less reticent. The Swedish minister, Mrs B. Dahl, said bluntly, "I am saddened and disappointed. We used all the forces of persuasion that we had with the British, but it wasn't enough. But I am still not giving up." Her Danish colleague, Mrs. L. Dubkjaer: "The problem was that the British were not willing to make concessions at the conference, while prior to it they were. It's too bad, but if they don't want to, unfortunately we can't force them. It is to be hoped that the British populace will apply greater pressure on its government." Belgian State Secretary for Environment Mrs. M. Smet expressed her irritation with the nuclear footnote to the declaration provided by the British. "That is not the goal of a conference, and it is not good for the North Sea."

Over the last two days, Patten made it clear that he did not come in order to concede more than he had announced shortly before the conference. Although there were lengthy efforts to talk the British around yesterday—the conference ran two hours over schedule and a visit to the Museon was cancelled—it was to no avail.

WEST EUROPE

Maij-Weggen: "The British showed a little bit of movement on several points, but we would have liked to have seen more flexibility. Better luck next time."

The environmental movement, none too optimistic about the results of this third North Sea Conference to begin with, reacted afterwards with utter dismay. Folkert de Jong, the coordinator of Seas at Risk, the federation of environmental groups surrounding the North Sea, said bitterly, "This is less than the bare minimum. The English continue to dump chemicals, and no resolution whatsoever was adopted on dredging. A reduction of 70 percent was announced for only four toxic substances, but that was a completely arbitrary choice. They were intended as examples, but they came to assume a separate existence." De Jong was referring to cadmium, mercury, lead, and dioxins. "Aside from dioxins, there are chemical compounds that are at least as dangerous as these. In short, pollution continues, although perhaps at a somewhat slower pace."

Greenpeace lumped all the participants into one category: "ministers of failure": "It is an illusion to suppose that the North Sea environment can be saved with this package of measures. Despite the catastrophes that have struck the North Sea in recent years, these measures appear to be directed more towards pacifying the public than towards developing a plan to truly protect the sea."

Siegfried Woldhek, director of the Bird Protection Society, leaned against the balustrade of the staircase in the Congresgebouw in The Hague, disillusioned: "This is of no use to the sea birds. The Hague declaration means that hundreds of thousands of them will continue to die each year."

Was there then nothing on the positive side? "It was a step forward," was what many ministers had to say. Maij-Weggen provided the following as her personal opinion: "I am certain that the Declaration of The Hague will have a positive effect on the North Sea and the environment." State Secretary P. Dankert, the leader of the Dutch delegation: "We are a little disappointed, but the overall picture is positive." The former member of the European Parliament underscored the important position that the EC can adopt in the area of legislation.

Belgian State Secretary Smet had her own specific approach: "Belgium is a federal state, but the three constituent elements are bound to this declaration." Twice, she announced that she had the authority to do so. One of the reasons was that the state secretary wanted to make it clear to non-Belgian listeners that internal political relations in Belgium are no longer an obstacle to participation in this sort of international conference.

Such statements were not directed at the English minister, Patten. After he had provided his viewpoint, he hurried out of the Congresgebouw. Host Maij-Weggen explained: "He has to catch his plane in order to be at work on time tomorrow morning." In other words, Patten was heading for the other side of the North Sea.

EC Agency To Gather Environmental Data

90WN0013B Paris *LE MONDE* in French 27 Mar 90 p 15

[Article by *LE MONDE* correspondent Philippe Lemaitre: "Environment: Charged With Gathering Data From the Start, European Agency Will Have Broader Authority Two Years From Now"]

[Text] Brussels (European Communities)—The European Environment Agency was officially created in Brussels on 22 March. The ministers of The Twelve adopted the articles of incorporation, but also decided that the agency would not go into operation until the ministers of foreign affairs agreed on where its headquarters is to be. Among the candidates, Copenhagen and Madrid seem to be the front runners.

The Agency's chief function will be to gather detailed data on Community countries' environmental situations. However, in accordance with the European Parliament's request, the ministers have agreed to the plan for extending its powers at the end of two years time. At that time it could be associated with the Brussels Commission's supervision over the proper application of the European rules within the EEC. That is, the data collected by the Agency could be used for this supervision, but the Agency will also take the initiative in standardizing verification procedures. This is necessary if we intend to ultimately create a truly Community-wide inspection system. Originally, the European Parliament would have preferred to entrust the Agency with this mission right away, but the Commission as well as several member states felt that that would be premature. Mr. Brice Lalonde indicated that he was not opposed to the idea.

A Conference in Dublin

The ministers adopted a resolution describing the chief orientations of a Community policy for handling waste materials. It specifically indicates that they must be eliminated at locations that are as close as possible to those where they were produced. The Twelve further approved a directive on "freedom of information" that gives individuals—as is the case with companies—the right to demand of national and Community administrative agencies information on any case involving the environment. After a lengthy debate, the Council [of Ministers] expressed the opinion that this new right should be exercised with as few restrictions as possible and it therefore limited derogations from it.

The ministers adopted a proposal made by Mr. Ripa di Meana, the commissioner with jurisdiction over the matter, to convene a conference that would bring together the environment ministers of The Twelve and of the East European countries. It is to be held in Dublin on 16 June. "It is politically important for the Community to appear as an agent in the dialogue with Eastern Europe. For the protection of its environment, money can more profitably be spent on Eastern than on Western

Europe. We are determined to pursue a policy of solidarity, of collective participation in Eastern Europe, as, moreover, we will in the Mediterranean," Mr. Lalonde declared.

It was agreed that 44 million ECU [European Currency Unit] of the 300 million ECU (Fr2.1 billion) in loans for Poland and Hungary figuring in the Community's 1990 budget would be allocated to the campaign against pollution. The Twelve recently decided to extend Community action to the other countries of Eastern Europe, often committed to reform policies (Czechoslovakia, the GDR, Bulgaria, Romania), and to make provision for a supplementary budget, also for 1990, of 200 million ECU (Fr1.4 billion). Mr. Ripa di Meana estimated that this new allotment would benefit protection of the environment in at least the same proportion, that is, about 30 million ECU.

Study Shows Consumer Pressure for Environmental Action 'Nil'

90WN0013C Paris *LE MONDE* in French 27 Mar 90 p 29

[Article by LE MONDE special correspondent Christian Chartier: "Brakes Applied, According to European Study: French Industry Lacks Enthusiasm for Ecology"]

[Text] Brussels—An environmentally concerned Europe does not exist.... At the end of last year, consultants from Touche Ross Europe Services (TRES), a subsidiary of the DRT [Directorate of Technological Research] auditing agency, which specializes in Community affairs, asked some 90 big industrial companies in the metallurgy, chemistry, or air transport sectors in eight EEC countries¹ for their views on ecological problems. Published on 6 March in Brussels, this study elicited this bitter remark from Mr. Ken Collins, the chairman of the European Parliament Commission on the Environment, Public Health, and Consumer Protection: "We have a Europe moving at different rates of speed as regards industry's concerns for its impact on the environment."

What do Danish company executives, 80 percent of whom feel that the influence of "green" considerations on their activities is "already too great," and their British counterparts, a certain number of whom simply deny that their companies are in any way responsible for the environment, have in common? And what again do German and Belgian industrialists have in common? Seventy-two percent of the former admit that they have modified—or plan to do so—a product in order to take the lead with consumers who are increasingly more appreciative of the "ecological" quality of the products they buy. Only a little more than half of the latter (40 percent) have taken such a step.

As for the French industrialists, they were unable to answer six of the 13 questions: "How will national or European regulation affect your affairs and your business sector? Have you adapted or will you have to adapt your production methods? Do you have any long-term

plans for evaluating your production in terms of the environment? Some of them were "particularly hesitant" to express their views, as was noted by the investigators—TRES consultants—who "had difficulty in finding the right person to speak to."

In France responsibility for environmental issues is assumed "at a generally low management level": Only chemical firms and oil companies have a "Mr. Clean" in their organization hierarchies. In the Netherlands, on the other hand, the companies that were interviewed said that they dealt with "green" cases at the top echelon (100 percent of the responses) and employed "environment managers" who have available to them "teams of two or three persons" (40 percent of the responses). Some French companies have written their strategy on the matter down in black and white. But generally speaking, they limit themselves to "respecting legal regulations and industrial standards." While accident prevention and safety concerns are at the top of the list, the development of production methods and products that preserve the environment have a lower priority.

French consumer pressure on business firms seems to be nil. The company officers who were interviewed answered the question about newmodes of consumption with touching unanimity: 100 percent of them said no. "Ecologists will be very interested in some of the results of this study," TRES suggested, without much chance of being wrong. All the more so since French industrialists are the only ones—in a noble, enthusiastic outburst of candor—who do not know whether they are imposing rules on themselves that are stricter than those imposed on them by law. This is the case in the seven other countries that were studied. At least this is what the companies that were polled assert, companies that nevertheless expect concern for the environment to exert growing influence—and therefore rules for its protection—at the level of the European Community (with the exception of the Luxembourgers and Netherlanders—who think that they anticipated the movement—and... the British).

In point of fact, the great single market cannot accommodate a diversity of situations among the members of the EEC. The disparity of their laws, like that of the studies [of the environment], constitutes an imbalance factor in the rules of free competition. "If a country imposes overly stringent environmental laws, foreign companies may no longer be able to export to it. There's a danger of protectionism," Touche Ross Europe Services deputy administrator Jean-Claude Brauda pointed out.

On the other hand, manufacturers subject to rules that are more flexible than elsewhere would benefit from more advantageous production costs.

Operation Truth

Reminding us that the European Parliament is waiting for a report on "1992 and the environment" from the Commission between now and the end of the year, Mr.

Ken Collins was of the opinion that the creation of a European agency for the protection of the environment which would be responsible for seeing to it that member countries comply with Community laws "will certainly prove to be necessary." He also hoped that manufacturers would examine their consciences: "Companies may make a profit, but they must also respect the environment and the Community, within which they operate and on which they depend." But, Mr. Collins concluded, "We must be prepared to apply pressure to industry to make it conform to European laws."

European Commission thinking seems to be moving in this direction. According to Mr. Michel Chaugny, an official at General Directorate 11 (environment, consumer protection, and nuclear safety), Brussels "plans to regulate the verification of compliance with environmental laws and make of it an instrument of restraint at the Community level." Thus, an operation truth could become obligatory, one to which a growing number of companies are already voluntarily submitting, according to TRES officials who have for this purpose developed a specific methodology with 1992 in view.

An environment audit consists of both an "inventory of the premises" of a given company as compared with "green" regulations and a detailed analysis of its mode of organization. "Eighty percent of the problems connected with the environment are organizational in nature: The transmission of information, assignment of responsibilities, coordination," pioneer of the environment audit George Molenkamp, who has developed it in the Netherlands since 1985, asserted. Today he heads the Netherlands firm affiliated with the TRES group. It employs 17 people and had a sales volume of about Fr8 million last year as against 2.5 million a year before that. According to Mr. Jean-Claude Brauda, prospects for the development of this "environmental counseling" activity in France are excellent. It is true that, according to the results of the study made by this firm, the market for it appears to be huge.

Footnotes

1. Belgium, Denmark, France, Ireland, Luxembourg, the Netherlands, the United Kingdom, and the FRG. No information was given regarding the identities of the companies involved [in the survey] or to what extent each was represented.

Spain Said To Lag Most on EC Environmental Norms

90ES0609Z Madrid *EL INDEPENDIENTE* in Spanish
9 Feb 90 p 25

[Article by Marisa Cruz: "Spain: the EC Country That Least Conforms To EC Environmental Norms"]

[Text] Brussels—Spain is the EEC country whose legislation with respect to the environment least conforms to EC norms, although the Spanish case has not been

termed "intolerable" as yet by the European Commission's services. According to the EC Executive Committee's audit report on compliance with EC environmental norms, Belgium and Italy are the two member countries that most blatantly violate environmental protection laws, while Denmark and Luxembourg show the greatest interest, by far, in safeguarding the environment.

Spain has not yet incorporated into its national legislation four environmental directives approved by its Council of Ministers. It has partially enacted only 15, and, in practice, fails to comply with 38. In total, of the 160 EC-approved provisions, 57 are not being complied with in Spain.

As of now, the Community has brought proceedings against Spain, under Article 169 of the EC Treaty, on all of these cases, 45 of which have resulted in initial notices, by the Commission, of noncompliance; nine in what is termed, in Community jargon, an "avis motive" [(French term): counsel's opinion], which is, at the same time, a second notice of failure to comply and a threat to lodge a complaint with the Court of Justice; and three have now reached the jurisdiction of the European Court.

Of the 57 Spanish cases of infraction of or noncompliance with directives, 12 took place in the water sector of the environment, two in the air sector, 10 concerned sewage and waste disposal, four concerned the chemical industries sector, and 29 were related to norms for the preservation of nature in general.

Within the community as a whole, according to the Commission's report of audit, there are 213 cases of failure to implement environmental directives, 90 cases of deficient or partial implementation, and 60 cases of non-incorporation into the national legislation. Of the 362 cases [as published] among the 12 member countries, 242 are at the initial-notice stage, 76 are in the "avis motive" stage, and 44 have been remanded to the jurisdiction of the European Court.

Complaints

The most frequent infraction is non-implementation of directives concerning the preservation of nature in general, with a total of 129 cases. Next in descending order of frequency are: The water sector, with 104 cases; sewage, with 62; air, with 32; chemical industries, with 25; and noise levels, with 13.

The European Commission report attributes responsibility for these infractions exclusively to the national authorities of the countries concerned who are empowered to incorporate, supervise and monitor environmental protection norms. In the opinion of the Community's Executive Committee, the citizens are the ones who show the most interest and conscientiousness when it comes to demanding implementation of this type of norms. The number of complaints and charges being received from the citizenry by the Commission has increased dramatically over the past several years. In

1984, the EC Executive Committee received only 11 complaints; in 1988 this figure rose to 190, and in 1989 it attained 470.

The commissioner for environmental policy, Carlo Ripa di Meana, has announced the European Commission's intent to "seek a way of enhancing its enforcement powers so as to enable it to compel compliance with its directives." Under study in this regard is the possibility of creating a "green" Police Corps of environmental police empowered to monitor and oversee compliance, and to impose penalties. According to Ripa di Meana, however, this project would have nothing in common with the proposal being considered by the European Parliament to confer those powers of oversight on the future European Environmental Agency.

The commissioner also announced the possible creation of a new structural fund along the lines of the three existing ones (FSE, FEDER, FEOGA [European Agricultural Guidance and Guaranty Fund]), devoted exclusively to the funding of projects and activities in support of environmental protection. This fund would support the implementation of Community legislation, would provide funding for the implementation of norms involving extensive costs, and would help fund trans-border projects.

[Box, p 25]

Spain In Recess

[By Manuel Montano]

The EEC European Commission's report citing Spain as the EC country whose legislation has least been brought into conformity with the Community's would seem to indicate that the work of the Spanish Environmental Agency over the past several years can be considered to have been "in a suspended state."

The government has decided now to create a mere Environmental Secretariat, so as to "elevate the rank" of the present general directorate that has operated as part of the MOPU [Ministry of Public Works], under Fernando Martinez Salcedo, until now. In this way, Spain will continue being the EEC country that accords the least importance to environmental policy, even as it structures its administration of that policy.

In meetings of the EEC member countries' ministers, a Spanish minister of public works, Javier Saenz de Cos-culluela, will continue sitting at the same table as the ministers of the environment from the rest of the EEC countries, since Portugal has now decided to make its ministry of the environment a specific one for dealing with the ecological challenges of the 1990's.

On the other hand, the large number of citations by the European Commission, including one that points up the dangers that hover over Donana, show that Felipe Gonzalez's Administration "couldn't care less" about

protection of the country's environment and of its citizens. In the socialists' view, "Spain is progressing," and nothing must interfere with its progress. But it must be remembered that progress is a choice. Maintaining an effective environmental protection policy is the best way to progress, if what is really important is the quality of life of the citizens over the short, intermediate and long terms.

[Box, p 25]:

Urgent Conference

Brussels' concern over the scarcity of interest being shown by most of the member countries in implementing norms for the protection of nature has moved the European Commission to convene an interministerial conference, which has been termed urgent.

According to the European Commission's report, the Community must play a leading role in the protection of the environment. But this role has yet to find expression among the individual member countries themselves, with "only a minority (Denmark and Luxembourg) having a coherent and well-defined policy in place in this regard." The high cost of implementing environmental protection norms, in terms of funding and human resources, is the excuse most used by the national governments to justify their lags.

Spain, with its 57 cases of deficient or non-implementation of directives, heads the EC list in this respect, and is followed by: Belgium, with 47; Greece, with 45; France, with 41; Italy, with 40; United Kingdom, with 31; Germany, with 30; Netherlands, with 24; Ireland, with 21; Portugal, with 14; Luxembourg, with 12; and lastly, Denmark, with only five.

[Box p 25]:

Autovia Del Norte

In Brussels yesterday, the president of the Statutory Community of Navarra, Gabriel Urralburu, sought to show, before the commissioner for the environment, Carlo Ripa di Meana, that the controversial Autovia Del Norte [Northern Thruway] project, which is to link Navarra with the Basque Country and the European highway network, does not fail to conform to the European Community rules and regulations on environmental impact, as had been reported. The routing of Autovia Del Norte, according to Urralburu, will not disfigure the landscape or the environment, and has been tied to a complete plan of corrective measures, such as the planting of vegetation, crossings for the fauna, and noise-reduction barriers to restore the initial conditions or attenuate the adverse effects of the construction work.

According to the environmental impact study forwarded to the Commission by the Navarra governmental authorities for the Commission's definitive approval, "the foreseeable impact on the autochthonous vegetation and on its associated fauna will in no case be critical." As

WEST EUROPE

JPRS-TEN-90-002

14 May 1990

regards the animal species, it asserts that "none will run the risk of extinction," and that plans even call for the construction of land and water underpasses beneath the highway that will provide crossings for the animals.

Mediterranean 'Environmental Disaster' Discussed

NC2904112390 Nicosia CYPRUS MAIL in English
29 Apr 90 p 1

[Report by John Stansell]

[Text] Ministers and senior officials of 17 of the countries with Mediterranean coastlines yesterday pledged their support for the Nicosia Charter, a document designed to transform fine words on the rejuvenation of the environment into positive actions backed by tangible finance.

The document has been thrashed out over the past three days by environment directors and some ministers from the main countries aided by representatives from the World Bank, the European Investment Bank and the United Nations Environmental Programme (UNEP), all of which have programmes aimed at saving the region from environmental disaster.

Announcing the accord, Andreas Gavrilidis, the minister of agriculture, paid tribute to the work that had gone into the genuine proposal for action, rather than had promises for numerous environment conferences in the past.

Decisions have been taken to "adopt a series of practical measures so that this meeting does not meet the fate of other conferences where a great deal, has been said and yet there was little likelihood of much being done he said. [no end quotation mark as published]

The key proposal of the charter is to commit resources, financial and practical, to achieve "for the year 2025 at the latest, an environment in the Mediterranean basin compatible with sustainable development."

Laurens Jann Brinkhorst, Director General of the Commission's environment directorate DG XI, said that the EC, in conjunction with the World Bank and the European Investment Bank, would be committing about \$1.5 billion to solving environmental problems identified within the Nicosia Charter. There was a new "synergy" he said, among Mediterranean countries to tackle the problems.

Among the most immediate actions will be programmes to provide up to 100 towns on the coast with adequate plants to treat sewage and other municipal wastes, to implement "integrated management" plans for jeopardized coastal regions with rapid urban growth levels, to establish programmes to protect endangered species of plants and animals, to ensure growth of forests and to cater for toxic wastes and other industrial effluents.

In addition, facilities for treating ballast water from oil tankers would be provided in an extra 20 ports by January 1993, monitoring and enforcement systems to prevent pollution by ships would be installed and at national level, a maritime navigation surveillance service would be in operation by January 1999.

Announced at the close of the conference was the decision by the government to offer the island as a test case in monitoring the effect of regulations and anti-pollution measures in solving or curtailing existing problems.

Officials and ministers responded warmly to the accord achieved in Nicosia, suggesting that they echoed the official line that this was a genuine "action plan."

Some questioned the wisdom of the haste in which the agreement had been reached, suggesting that the wording of the charter was not all it could be. Others, however, believed that because there had not been time to polish the wording of the Nicosia Charter to the extent some would have liked, it might end up being more effective in practical terms.

FEDERAL REPUBLIC OF GERMANY

FRG, GDR Environment Ministers Hold Talks

LD2804180490 Hamburg DPA in German 1716 GMT
28 Apr 90

[Excerpts] Hanover (DPA)—Federal Environment Minister Klaus Toepfer and his East Berlin counterpart Karl-Hermann Steinberg are striving for an environmental union to become effective parallel with the economic and social union. As of 1 July, comparable environmental laws will become valid for new investments in the GDR, the two ministers agreed at their first official meeting in Hanover today.

According to the GDR minister, it is still not known which FRG environmental laws are to be adopted. Areas such as waste recycling, which is well organized in the GDR, should be preserved.

In order to improve the Elbe, the GDR intends to reduce by 1994 its discharge of harmful substances by about 80 percent. Already, factories have been closed on the Mulde and Saale rivers, which have resulted in 65,000 job losses.

Toepfer and Steinberg agreed upon two plants, the Buna chemical combine and construction of a thermal power station in Magdeburg, as pilot projects for which 227 million marks will be invested by the Federal Republic with the GDR paying another 400 million marks.

For the future cooperation between the two environmental ministries, officials and other staff will be exchanged between Bonn and East Berlin within the next few weeks. The two ministers intend to meet bi-weekly.

Toepfer Article Suggests Environmental Union

AU2504090290 East Berlin *DER MORGEN* in German
19 Apr 90 p 3

[“Exclusive” article by FRG Environment Minister Klaus Toepfer: “Initial Signs Have Been Set”]

[Text] As a result of the revolutionary political changes in the GDR, the preconditions for cooperation between the two German states in the sphere of environmental protection have decisively improved. There is no doubt that the conclusion of an environmental agreement in 1987 was advantageous in that respect. Thus, we did not have to start from scratch. However, the extreme burdens on the environment, the full extent of which we have realized only recently, make us aware that time is running short.

The FRG Government, with the adoption of six pilot projects, has begun the process. The projects include measuring and transmitting stations for monitoring noxious substances, measures to reduce mercury in the Elbe, and the construction of heating and power stations with circulating fluidized beds. Funds of about 1 billion Deutsche marks will be provided from my budget for these and other projects.

In addition, the FRG and GDR, in the “Joint Environmental Commission,” are jointly drafting a comprehensive concept to create the same environmental conditions as in the FRG over the next decade, with the goal of establishing an environmental union between the two parts of Germany. To achieve this high goal:

- a) the legal preconditions have to be created so that the environmental standards valid in the FRG will also become binding in the GDR;
- a) a plan for redeveloping and improving the GDR’s ecology must be drafted;
- c) proposals for an ecology-oriented generation of energy must be prepared.

The redevelopment of affected areas in the spheres of air, water, waste, and soil, requires a coordinated concept concerning closures, installation of new technology, the treatment of old wastes deposited in dumping grounds, as well as the establishment of new plants. The current dramatic situation will in some instances not allow other solutions short of closing some enterprises. We must not overlook that closing enterprises will cause enormous social problems in the GDR. For that reason, the economic and monetary union must be introduced without delay. Investment in modern technologies under market-oriented conditions will lead to the creation of new jobs in the GDR.

At the same time, I consider the preparation of a phase plan urgently required for old plants whose existence seems useful from an ecological and economic point of view. Such a plan must provide for technologically modern equipment or the closure of plants, to be carried out within a certain period of time yet to be determined.

In establishing new plants or modernizing old ones, it must be ensured from the outset that the same legal standards as in the FRG are observed. The environmental gap between the GDR and its Western neighbors must not be accepted in the future. No exceptions concerning environmental standards will be made concerning investments in the GDR.

I proceed from the assumption that the GDR will adopt the elementary material-legal demands of the German environmental law in its legislature in the form of a law including guiding principles. In order to bridge that period, we will ensure, if necessary on the basis of agreements with industry, that the standards valid in the FRG will also be applied in the GDR in building new plants.

In addition, we will underline our willingness comprehensively to improve the environmental situation in the GDR by initiating measures for environmental protection on a broad basis that will result in quick and efficient aid with simple means. People in the GDR will only look to the future with optimism if they see that their living conditions improve rapidly.

Cabinet Approves New Environmental Foundation

90WN0001A Munich *SUEDDEUTSCHE ZEITUNG*
in German 15 Mar 90 p 33

[Article by hen, Bonn: “New Environmental Foundation Also To Promote GDR Projects”]

[Text] The environmental foundation proposed by Federal Finance Minister Theo Waigel and approved by the Federal Cabinet on Wednesday is also intended to serve to promote cooperative projects in the GDR. The “German Environmental Foundation,” which has been endowed with the proceeds from the privatization of Salzgitter AG (about DM2.5 billion), and which, according to a provision of its statutes of incorporation, is to begin its work already this year, will focus particularly on aiding small and mid-sized economic enterprises with environmental projects. The headquarters of the foundation—presumably in Lower Saxony—will be decided upon only during the course of the legislative process.

In the draft bill’s justification statement it is noted that, with the establishment of the environmental foundation, federal funds that in the past had been tied up in investments in Salzgitter and that were no longer serving an important interest of the federal government there, would be devoted to a new, future-oriented objective. Thus, in the pattern of the establishment of the Volkswagen Foundation in the year 1961, a second large foundation will be created from the proceeds of a privatization by the federal government. According to the draft bill, it is to concentrate on the following areas of activity:

1. Research, development, and innovation in the area of processes and products that are not harmful to health and the environment—with particular attention to small and mid-sized enterprises;

2. The exchange of knowledge concerning the environment among science, business, and other public and private areas;

3. Inner-German cooperative projects for the application of environmental technology—primarily by small and mid-sized enterprises—to include measures to provide training and continuing education; and

4. The maintenance and preservation of cultural objects of national importance with regard to harmful environmental influences—particularly within the framework of model projects.

The management of the budgetary and business affairs of the foundation, which is to award an environmental prize annually, is subject to examination by the Federal Auditor's Office. Moreover, the Auditor's Office proposed that it be given the additional right of monitoring the recipients of the foundation's services. Waigel rejected this with the explanation that the foundation itself would monitor the use of the funds for the agreed-upon purposes, and that an additional right of oversight on the part of the Auditor's Office would meet with resistance from the predominately small and mid-sized recipients. Furthermore, the federal finance minister also told the cabinet that he would submit a draft of the foundation's statutes of incorporation as quickly as possible. It has been learned that a working committee of the governing coalition is to have the statutes of incorporation drafted by early May. After that, leading personalities from business, politics, and society could be nominated by the federal government to the foundation's various bodies. Above all, in order to make possible the promotion of GDR projects yet this year, the draft bill has been categorized by the cabinet as being especially urgent.

It is the federal government's intention that in addition to the assistance provided by the foundation, no further governmental program should be created. Rather, the "German Environmental Foundation" should be active precisely in those areas that have not received governmental assistance to date. Support to basic research is not foreseen; however, since some overlap with governmental programs will not always be avoidable in individual cases, the foundation will be granted a certain degree of flexibility in the selection of its projects. Supplementing governmental programs will therefore be possible, but not double funding. Furthermore, the foundation may not provide any assistance in bringing goods or services onto the market, but can only assist the development of innovative processes and products in the area of environmental protection. The federal government derives its legal authority to stipulate the purpose of the foundation from Article 74 of the Basic Law (Jurisdiction over Waste Removal, Air Quality Preservation, and Noise Abatement), as well as from its responsibility for the area of small and mid-sized business promotion.

Coalition Parties Consider Pollution Taxation

FDP Program

90EN0487A Duesseldorf HANDELSBLATT in German
26 Mar 90 p 3

[Article by agr: "Taxes Are To Bring About Careful Treatment of Nature"—first paragraph is HANDELSBLATT introduction]

[Text] The FDP [Free Democratic Party] wants to supplement the traditional environmental policies of laws and prohibitions with instruments geared to the market economy, especially by means of environmental taxes. This is the plan outlined in the draft of an ecological program that was introduced by the deputy chairman of the FDP, Gerhart Baum.

The draft is to be adopted on 19 May by the party's federal central committee as the environment policy guideline for the 1990's. Baum stated that the FDP places special value on instruments geared to the market economy for protection of the environment. It is only natural that resources such as water and air must have their price, so that these assets will be dealt with in a more conservative and ecologically considerate manner.

The draft does not, however, go so far as to provide for concrete levies. Thoughts run along the lines, for example, of an energy or a carbon dioxide tax, a landfill tax, or a tax on the spoiling of the landscape through indiscriminate low density construction. A document which will deal with these things is currently being prepared by a working group headed by FDP tax expert Hermann-Otto Solms, and will be discussed at the federal central committee meeting.

Rejection of the Introduction of a General Ecological Tax

Under no circumstances is any thought being given to a general ecological tax, such as the SPD [Social Democratic Party of Germany] and the Greens favor, Baum stated. The FDP does, on the other hand, support the plan of Environmental Minister Klaus Toepfer to convert the vehicle tax into an exhaust emissions tax.

On the other hand, Baum was critical of the environmental policy of the federal government to date. Much has been accomplished, to be sure, but the FDP is dissatisfied with the fact that the hoped for law on the conservation of nature has not materialized. Nor has any progress been made toward incorporating the protection of the environment into the Basic Law, Baum criticized. But he expects steps to be taken in this direction as a result of the revision of the Basic Law that will be necessitated by the unification of the two German states.

Baum termed it one of the "classical realizations in environmental protection" that damage to the environment emanates from the production and consumption of

energy, from industrial plants, from an agricultural system oriented to maximum yields, and from the transportation sector.

Spoiling of the Landscape by Indiscriminate Low Density Construction

What has thus far not been sufficiently appreciated is the extent to which housing development is impinging on the limits of environmental tolerance. Also newly incorporated into the program, which extrapolates an environmental program stemming from 1981, was a section on international problems. Here, special attention is called to the population growth and thus on the need for birth control.

The FDP demands the long-term reduction of the consumption of fossil fuels by one-half. Also needed are strict limits on the use of land, the purification of surface waters "in accordance with the state of the technology" in a maximum of 10 years, a new policy on waste products aimed at their prevention, traffic conditions that are compatible with the environment, an international agreement on the care of the oceans and tropical forests, and a worldwide conversion to environmentally friendly industrial production and agriculture.

According to Baum, environmental policies are rapidly becoming a strategy of survival. They have long since ceased to be just one branch of politics among many, and are now a principle that must permeate nearly all other realms of politics "if we do not want to become co-responsible for the uninhabitability of the earth." Nor is environmental protection a repair shop, Baum emphasized.

CDU Proposal

90EN0487B Duesseldorf HANDELSBLATT in German
28 Mar 90 p 8

[Article by agr: "High Prices Are To Prevent Wasteful Treatment of the Environment"—first paragraph is HANDELSBLATT introduction]

[Text] The CDU [Christian Democratic Union] expects a greater role of the market economy in environmental protection matters from the introduction of new control taxes. The chairman of the Federal "Environmental Protection" committee of experts of the CDU, Kurt-Dieter Grill, declared that the utilization of the environment must have a price that is "high enough to prevent dealing with it wastefully."

Market economy oriented control and establishment of guidelines by the state, economic inducements, and clear laws and prohibitions ought to be the "driving forces of a dynamic environmental policy in an ecological and social market economy," Grill felt.

In addition to the already resolved improvement in the waste water taxation law, the environmental committee of the CDU demands numerous new levies. And so, for

example, in the clean air sector they demand the introduction of a residual pollution tax after 1 March 1994, when the time limits set by the Technical Guidance-Air [Technische Anleitung-Luft] run out. A considerable need for action is seen by the CDU politicians in the reduction of carbon dioxide emissions. They demand the EC-wide introduction of a carbon dioxide tax.

In addition, they are pleading for limits to be placed on the depletion of the landscape through new zoning laws and for the introduction of a conservation tax to finance necessary conservation measures. A landfill tax must be introduced for special waste products in order to "permanently increase efforts by the industry to avoid such products altogether or utilize them in other ways."

On the other hand, Grill emphatically rejected the SPD [Social Democratic Party of Germany] plan for a general ecological reorganization of the taxation system. The use of taxes can be justified only in those "cases where their ecological effectiveness is assured," he felt. As an example he cited the conversion of the motor vehicle tax. In the future, this tax is not to be oriented to cylinder displacement as the basis of measurement, but to exhaust emissions. This is an incentive to develop and buy automobiles with low emissions. On the other hand, a mineral oil tax, such as the SPD demands, was rejected by Grill. With such a tax, the SPD only wanted to finance its sociopolitical program.

At the same time, Grill favored solutions involving certificates or compensations, whereby, through the purchase of negotiable certificates, companies can gain the right, "in return for payment, to use air and water like their own private property within limits established by the state."

FRANCE

High Clean-Up Cost in Refinery Field Predicted
90WN0013A Paris LES ECHOS in French 21 Mar 90 p 8

[Article by Mg. L.: "Environment: Antipollution Could Cost French Refiners From Fr10 to 25 Billion"]

[Text] Fr25 billion. This is the sum of the effort (investments and operating expenses) the oil companies operating in France would have to make to comply with all the extremely rigorous standards, depending on the various products, that are in force today. These especially involve the sulphur content of fuels, fuel oils, and oil tanks, the lead and benzene contents of gasolines, and refineries' nitrogen oxide emissions.

Another calculation: This supplement represents a surcharge of \$2.2 a barrel, or 12.2 percent of the average

WEST EUROPE

price of a barrel imported by France in 1989. And what a coincidence: That corresponds exactly to current refinery costs.

Of course, this evaluation presented by the French Association of Petroleum Technicians (AFTP) is based on an extreme scenario. In fact, most of the standards that have been adopted involve suddenly departing from the stages [of control] observed up to now by those countries that have most rigorously pursued environmental issues.

A more realistic scenario, at least in the short run, would cost the French refineries another Fr10 billion, the difference between the two AFTP calculations often being explained by the threshold effects on the standards, which make it necessary for the refineries to completely change some plant equipment.

"We have the technical solutions ready and waiting and we're ready to assume our responsibilities, but not alone, since it's not just oil tankers that contribute to pollution," Bruno Chevalier, the head of the AFTP "refining" department, stated yesterday before emphasizing that we must also see to it that "investments that are pledged are not out of proportion to what may [reasonably] be expected."

Former Environment Minister Huguette Bouchardieu, a guest of the AFTP, acknowledged that not all the EEC countries have achieved the same performance levels concerning desulphurization. And also that, "as soon as we cross a border into Eastern Europe, we note considerable numbers of rejections." But she also protested the temptation to shift the blame onto others (automobile manufacturers, other countries, consumers,...) on the pretext that "pollution crosses borders."

GREECE

U.S. Bases Seen Harming Environment

90ES0752X Athens PONDIKI in Greek 5 Apr 90 p 32

[Excerpts] The following text is the basis for the report presented by Kostas Diakos, a member of the group of Independents in the Federation of Ecology-Alternative Organizations (and a candidate for the Ecology-Alternatives in the First Athens District) at the two-day conference of Mediterranean Green parties and movements which was held at Pandeios University on March 10 and 11.

His subject: "The Foreign Military Presence in Greece and its Ecological Dimension." We publish it because it offers a new approach to the question of the bases: ecology!

"The foreign military presence in the Mediterranean region is a 20th Century phenomenon and is expressed at two levels. The first is related to the military installations of other countries in Mediterranean countries. The

second is related to the presence of military forces, mainly naval, in the Mediterranean basin. [passage omitted]

"In the context of the NATO alliance and bilateral military agreements with the United States, Greece is today one of the basic elements of Western strategy in this geographic region. We all know the aspects of this military presence as they relate to national independence and the charting of our country's overall policies.

"But have we studied its influence on our environment, on our country's social and moral interactions in our culture? I believe the subject is open to research for two reasons:

- "The first comes from the emphasis given in the past to the influence exerted by the military presence on our national independence and which emphasis considerably reduced research in this second dimension.
- "The second reason is the limited access to information since under the cover of "military secret," non-military problems are also covered.

"Nevertheless, we can approach the subject for the purpose of stimulating further study and research. The environmental effects from the foreign military presence are varied and unhindered. Characteristically, one may cite the cutting of trees around the base in N. Makri in a 500-meter radius. This, combined with the banning as well as lack of interest on the part of residents who live around the base, has turned the area into a deserted landscape which has upset the ecological balance.

"Moreover, who does not know that the sea 1,000 meters right and left of the base is polluted to the point where a swimming ban is suggested? But even if it is transferred from this area it will most likely go Irakleion in Crete—another urban center with special environmental problems.

- "At Aktion, the landing and takeoff of AWAC's and B-52's require even bigger installations and runways and this led to the building of an embankment in the Preveza lagoon which is a rare fish spawning ground and a significant income source for area residents.
- "In other installations (telecommunications) such as Ismaros, Vitsi, old and rare trees are cut down to prevent fires. One cannot question the sound pollution added to the already heavily polluted Ellinikon area by the American military base there (at a 20 percent higher level according to the estimates of surrounding municipalities).
- "In Crete trees were cut in large areas to develop firing ranges and in the Suda region studies have shown that certain types of fish have disappeared.
- "Finally, in the areas with military installations, we have anti-environmental housing development interventions for the housing of military personnel and their families.

"At the cultural level, the need of foreign military personnel to engage in their national way of life shapes a

different cultural model which denies the traditions, way of life, even the language of the host country. Glyfada is such an example, which is a center of hard drug trafficking, a center of crime in the Attiki region, and a model of monkey see-monkey do in accepting a way of life which is incompatible with the climate and history of this geographic area. At the same time, social interactions are geared to the needs of the foreign military and have as their model their social way of thinking.

"The defense of the host society to the military presence is inadequate for two reasons.

- "The first comes from the excessive emphasis on national security which leads to indifference to the weakening of essential social links which define the national identity. Specifically, no agreement for installation of foreign bases in Greece includes respect for the country's environmental, cultural, and social identity.
- "The second comes from the inability of the host country to check on the activities of foreign military. Specifically in Greece, in the 1953 agreement for American bases no such arrangement was included.
- "Later agreements provided that the American commander was responsible not only on military but administrative matters, limiting the Greek military representative in relation to Greek authorities.
- "The 1983 agreement did not change the situation substantially since the American commander has command and control (Art. IV, 2) and the Greek representative controls only Greek personnel and areas used exclusively by them (Art. IV, 1).

"These arrangements show clearly that Greek intervention into administration of the base is minimal. So we have issues concerning justice and extraterritoriality which in effect leave unpunished whatever destructive effects the bases may have on non-military sectors.

"Finally, two other activities of the foreign military presence in the Mediterranean have serious environmental effects.

- "The presence of foreign naval forces in the Mediterranean increases existing sea pollution from other causes, since naval units discard trash and other pollutants into the sea. In this context, we have floating resupply bases for two fleets (Soviet and American) on opposite coasts of Crete which are likely to have serious pollution consequences from energy fuels.
- "The other activity relates to the war games of these foreign military forces.

The frequency of such war games, which is greater than that of national forces of Mediterranean countries, burdens the sea environment with several materials (such as lead and toxic waste). War games in the Aegean often take the form, according to officials, of real war against the total physical environment (including living organisms) in addition to the human factor.

"This is a serious impediment, for example, to the Mediterranean seal in the region of the Sporades Islands. In the last decade, following such a military exercise, dead fish were beached in Samothraki. The matter was closed without a study of the causes of this catastrophe.

"It is evident this issue requires further study. At the same time, however, beyond opposition to the presence of foreign military forces in the Mediterranean, it is believed that until the bases leave social control over their operations is the key element."

Power Plants Seen 'Awash' in PCB

90WN0015A Athens *ETHNOS* in Greek
26 Mar 90 p 18

[Article by Christos Telidis: "Swimming in 'Clofen'"]

[Excerpts] About four to five months ago, hundreds of workers employed at the 16 steam-powered electric power stations in western Makedonia, that constitutes the country's energy center, were literally taking a "bath" in cancer-causing 'Clofen,' that was being used as an ordinary mineral oil without any precautions taken.

It is estimated that dozens of tons of this dangerous product are located in the Kozani-Ptolemais-Amindaio region. The overall amount has not yet been determined but it is estimated that it will surpass 100 tons, while large amounts have from time to time over the past few months spilled out over the ground and water of the area. Mainly responsible is the DEI [Public Power Corporation] that had not basically informed its personnel about the situation.

Although there was a ministerial decision dating from 1985 that set strict conditions for storing and destroying PCB, as 'Clofen' is called, the DEI did not do the slightest thing about this nor did it inform workers who came in contact with it, letting them use it as an ordinary mineral oil with all the effects on their health and the environment.

Admission

The admission by Mr. Nikos Yiatopoulos, director general of the Kardia steam plant, to worker representatives and local authorities, is revealing about the DEI's large responsibility. He was obliged to answer questions that were raised during the two-day meeting on pollution organized last weekend by the Kozani labor center.

He said, "We never had any guidance on or information about what 'Clofen' is. We used to read in the newspapers about its effects but we were unable to do anything since there was nothing said officially. A few months ago, we had specific instructions from the DEI on protection practices that we implemented. We also located and recorded all amounts of 'Clofen' that existed in the plant."

This criminal neglect by the DEI has upset workers in the 16 plants, especially electricians, electronic specialists,

WEST EUROPE

and boiler supervisors who mainly come in direct contact with this dangerous product.

Charges were made to ETHNOS by trade union officials and other workers who had direct contact with this product. Respecting their request that they remain anonymous, at least at this time, we will restrict ourselves to describing their charges and to what they told us.

'Clofen,' as it is called in Germany, or otherwise called 'Piralenio,' 'Askarel,' 'Piroclor,' etc., was used by us to fill condensors and transformers.

It was used without any precautions, just like any ordinary mineral oil that we handled. It came in contact with our skin and we used to wipe it off with an ordinary rag. Many times we even tasted it when, without any suspicion whatsoever, we used our mouths to unblock a flowmeter that had been clogged by the liquid.

There were instances where valves burst and any who were nearby were "drenched" by the 'Clofen.' This was followed by a shower, not always, however, and we thought it was over with. In 1989, we had a big spill in the Amindaio steam plant and the spilled 'Clofen' was channelled from a canal into Lake Veroritida.

This kind of spill occurred often in many DEI stations and the residue together with the soil was either buried in a regular dump or thrown into canals of the area. [passage omitted].

The Curse of Lignite

Kozani—Greece's energy "heart" in western Makedonia is sick. Pollution is making the situation unbearable in the Kozani-Ptolemais-Amindaio area where there are 16 DEI power plants. The inhabitants of the area are also in an uproar.

Their slogan is "pollution kills." Kozani and Ptolemais have their own pollution cloud that makes daily life unbearable when no wind is blowing. Here snow is ash-colored and everything is covered with a layer of ash.

There have been insufficient epidemiological surveys made but data forthcoming from on-site studies made are disturbing. Bronchitis among children of Ptolemais is three times higher than that in children of other areas. The first data relating to a total of 1,000 workers in lignite mines and DEI steam power plants reveals a large increase in various lung diseases, while the percentage among those in the 25-30 age bracket is especially high.

A week ago, after a two-day meeting organized by the Kozani labor center, local officials unanimously decided to stage demonstrations in May, demanding that specific measures be taken for the region's environment and demanding the right to have clear air to breathe.

Mr. Kostas Mavrommatis, mayor of Ptolemais, said, "The blessing of lignite has turned into a curse. Nature is taking revenge for our inconsiderate behavior."

Mr. Fotis Kritsanis, president of the Ptolemais labor center, charged that a DEI steam power unit operated for six months with a damaged filter!

ITALY

Government Bans Use of 4 Herbicides

90WN0003A Rome *IL POPOLO* in Italian
23 Mar 90 p 4

[Article by Roberto Mostarda: "Atrazina Prohibited in Italy for All of 1990; a Decree Forbids the Sale and Use of It Along With Three Other Pest Control Herbicides"]

[Text] Rome—For atrazina, the black sheep of the weed killers, which are otherwise known as herbicides, 1990 will be the year zero in Italy. With a decision that certainly will give rise to discussion but that has the merit of clarity, Minister of Health De Lorenzo, in agreement with Minister of Agriculture and Forests Mannino and Minister of the Environment Ruffolo, launched a series of specific measures on 22 March 1990 that forbid the sale and use of all products based on atrazina, and of other compounds such as alaclor, metalaclor, and trifularin, for the entire current year.

The stated purpose of this action is to "ensure a more rapid and effective recovery of the drinking-water resources of various areas in the Po Valley and adjacent areas—which, as is known, have been characterized by levels of atrazina greater than the maximum levels provided for in the existing laws—as well as to ward off the onset of similar problems in areas that are unscathed at present."

The decree provides for a reexamination of the situation at the beginning of 1991. But, on that occasion, too, the use of atrazina alone, or in quantities greater than 0.75 kg per hectare, will not be authorized in any case.

To have exact knowledge of the problem, it is necessary to call to mind the dramatic situation found to prevail in broad zones of the Po Valley in recent years, where the supplying of potable water was concerned. In that connection, the investigations that were carried out revealed how, when herbicides were present in the deep water and in the springs from which the water resources for urban and agricultural use were obtained, the water was heavily contaminated. A vigorous debate between the political forces and the people working in that sector resulted from the finding, and, finally, a drastic demand was made for a referendum to decide whether the use of those products should be abolished. The referendum would take place in June 1990. Thus, this is a burning question. And the decision made by the government to prevent the harm done from becoming even more serious was an extremely realistic one.

Where the other products are concerned, it is decreed that alaclor cannot be used for soybeans, and only in reduced quantities for corn. The same ruling will hold

for metilaclor. For trifularin, the companies will have to state the purity requirements.

The ministerial communication presenting the decree adds that the ministries' "primary interest in safeguarding public health" forms the basis for this decision, and that it "is compatible with the needs of agriculture, since the function of killing weeds can be performed by other products that are satisfactory from the point of view of safety."

FIAT To Market Nonpolluting Electric Car
90ES0558A Milan IL GIORNALE in Italian
8 Feb 90 p 7

[Unattributed article: "We'll Make Cars That Are More Ecological"; FIAT To Spend 1.2 Trillion Lire"]

[Text] Turin (e.b.)—The electric Panda, christened the "Elettra," is the first concrete proposal by a leading European automobile manufacturer to provide a radical solution to the problem of air pollution and the problem of urban mobility. Advance orders are being taken now, in fact, and a consignment is scheduled for delivery in less than three months; the car is priced at 25.6 million lire ready for use. In putting this interesting solution into practice, FIAT chose to be realistic: nothing futuristic, batteries that are almost conventional, a high degree of functionality and reliability. Engineer Scolari himself, in his report during the conference on mobility and the environment, was categorical: We do not intend, he said, to build toy automobiles; we believe the electric car for urban use should be a complete, solid automobile, with all the active and passive safety features that progress has brought us. At this stage, the decision in favor of electric traction is no longer based on evaluations of the energy balance: The efficiency calculated for endothermic power is 14.6 percent, compared to 12.6 percent for the electric solution. It is a disadvantageous energy balance, but it is accepted in the interest of the total abatement of the polluting emissions. Only in the future will it be possible to increase the efficiency.

The Panda Elettra, with its ecological green stripe on the side panels, is therefore a complete utility vehicle in every respect. It has only two seats because all of the space in the middle and the rear is occupied by the storage batteries. These are recombination lead batteries, with 12 6-volt modules in series, that weigh a total of 350 kg. A battery charger in the baggage compartment comes as standard equipment; it recharges the batteries in eight hours at 220 volts and 16 amperes. To balance the weight, a small number of the batteries are located in the front together with the continuous-current (excitation in series) motor that delivers 9.2 kw of nominal power. Also available as optional equipment are nickel-cadmium batteries that have more than twice the electrical density but cost more than four times as much. With regard to speed, the Panda Elettra weighs 1,050 kg, carries 100 kg of baggage in addition to the two passengers, and can

attain a maximum speed of 70 km per hour. It accelerates from zero to 40 km per hour in 10 seconds and is capable of climbing grades of more than 25 percent. If a speed of 50 km per hour is not exceeded, the car has a range of 100 km, or 70 km under the rather severe urban conditions of the ECE standards. Just by using the nickel-cadmium batteries, the 100-km range becomes 180 km in both of the instances cited above.

One interesting fact is that, despite the advanced electronic control of the delivery of power, it was decided to retain a four-speed transmission with relative friction. This serves a special purpose, however, for, generally speaking, one need only shift into third gear and, without using friction, a quite satisfactory speed can be attained in heavy city traffic. Nothing is overlooked to make it a complete automobile: The heating system uses a gasoline burner with an appropriate hydraulic system that has an excellent air conditioning and defrosting capability. The electrical system that supplies power to the accessories has its own 12-volt battery. And all of the usual safety features are present just as in the regular gasoline-powered Panda. Another item not overlooked is the system for recovering energy while decelerating.

The next step, as we know, could come quickly: The electric Panda could be followed soon by an electric Uno. The technical possibilities could prove to be increasingly ambitious, for, although FIAT's technical experts believe electric traction will never be practical outside of the urban areas, plans are already being made for bimodal motorization (internal combustion engine plus electric motor) or for the hybrid automobile, wherein the internal combustion engine (which could also be a small turbine) functions solely as a generator. In this way, the car of the future could perform all of its functions—urban and extraurban—with maximum respect for the ecology.

NORWAY

Project For Mapping Environmental Poisons Announced

90WN0034A Oslo AFTENPOSTEN in Norwegian
18 Apr 90 p 52

[Article by Erik Veigard: "National Mapping of Environmental Poisons"]

[Text] Tromso. This summer, the Directorate of the Natural Environment will launch a long-term project to register the effect of environmental poisons on nature everywhere in Norway. The project will register the current condition for natural ecosystems so that in future years, it will be possible to monitor how the environmental poisons affect nature. In a preliminary study, data will be collected from between 100-200 places. The project will provide a national status report on environmental poisons, Gunn Paulsen, primary adviser for the directorate tells AFTENPOSTEN. The project will mainly concentrate on the effects of pollution that is

transported over a long distance (by air), such as lead, cadmium, zinc, aluminium, quicksilver, and chlorine, but other forms of environmental poisons will also be registered. Eight regions from Reisa in Nord-Troms to Gjerstad in Aust-Agder are suggested as special regions where more extensive and more long-term monitoring will take place. In these areas, frequent samples will be taken from the earth, lichen, and moss. In addition, animals, such as elks, deer, reindeer, roe deer, willow ptarmigan, hare, and fox will be studied. Endangered species that are believed to have been hurt by the pollution, for example, peregrine (falcon) and gerkalcon will be given special attention. In the selection, emphasis is put on finding the most undisturbed nature condition that is not subjected to heavy local encroachment. In this way, we obtain an apparatus that can alert us if something seriously wrong is happening to Norway's ecosystem, says Gunn Paulsen. During the starting phase this year, 5 million kroner have been appropriated.

Monitoring in two of the eight main regions will be started this summer. The nature monitoring project will be coordinated with the Swedish project for environmental quality, a research project the Swedes have been operating for 10 years which has great similarities with the Norwegian project.

Statistics Show Large Decrease in Air Pollution

90WN0020A Oslo AFTENPOSTEN in Norwegian
27 Apr 90 p 8

[Article by Ole Mathismoen: "Big Reduction in Sulfurous Effluent"]

[Text] Mild winters and relatively low economic growth in the last few years have resulted in less air pollution from Norwegian territory. In 1989, 65,000 tons of sulfur dioxide (SO_2) were released, in comparison with more than twice that amount a few years ago.

Growth in the emission of nitrogen-oxides (NO_x) and "greenhouse gas" carbon dioxide (CO₂) has also decreased, according to a recently-submitted environmental report from the Central Statistical Bureau (SSB). Where those discharges are concerned, the favorable developments of mild winters and low economic growth have also been significant factors. Less heating and less automobile travel quickly produce favorable results where Norwegian air pollution is concerned. Consequently, a sharply rising curve for all of the above-mentioned kinds of air pollution through most of the 1980's has come to a stop now. However, it is stated in the report from the SSB that concentrations of nitrogen-oxides in the air in many towns in Norway continue to be higher than the marginal values set by the health authorities.

The favorable environmental development in Norway corresponds approximately to the trend in the other Scandinavian countries. Both Finland and Norway have reduced their SO₂ discharges by 50 percent since 1980, while Sweden and Denmark have reduced them by 40

percent. In the course of a few years, the reduction in Scandinavia will be closer to 60 or 70 percent.

Over the Frontiers

The problem is just that such a favorable development where our emissions are concerned does not have anything resembling the same favorable effect on nature as a whole. Air pollution knows no national frontiers, and a full 90 percent of the air pollution hitting nature in Norway comes from other countries. In the report from the SSB, it appears that without significant investments in purification efforts in Europe and North America the discharges of sulfur dioxide and nitrogen oxide will increase by several percentage points in the next decade. However, it will be possible to purify nearly 80 percent of the present effluent by introducing severe purification measures. However, the situation is worse where carbon dioxide is concerned, for constantly larger amounts of it will be discharged in all of Europe no matter what purification efforts are made. CO₂ cannot be purified, and there are many indications that it will be the biggest environmental headache in the 1990's. That substance is released by the combustion of fossil fuels, and it is being collected in constantly increasing quantities in the atmosphere.

That contributes to the greenhouse effect, which more and more research workers think is in the process of causing a global warming-up process.

Loans and Guarantees

It is suggested in the report that the environmental effect for Norway can also be significantly greater if we invest in environmental efforts in Eastern Europe, for example, before continuing with more and more expensive purification here in Norway. Loans of considerable size and guarantees are now being given, through the Scandinavian investment banks, to Scandinavian companies that want to start production of environmental technology in East Europe.

Parallel with that, international discussions on changing the way international environmental agreements are entered into are also going on. Up to the present, the principle that has been followed has been that each individual country must obligate itself to carry out the same percentage of pollution reduction within its own borders no matter what its ability to pay or the price of purification efforts may be. That would result in poor results for Europe's environment as a whole since the Scandinavian countries would be required to invest enormous sums to push their marginal discharge rates down even lower while countries like Czechoslovakia and Poland could not afford special purification work at all, even though small investments would result in significant environmental gains.

Reduction

It also appears from the report from the SSB that the total consumption of energy in Norway decreased in 1988 and 1989.

The decrease from 1988 to 1989 was approximately one percent. Likewise, the production of water power in 1989 was at a record figure, with 119 kilowatts of electric power being produced. Also in 1989, we exported 15 kilowatts at low prices, while the price of electric power in Norway increased by 3.1 percent.

DENMARK

Ministry Readyng Plan on Agricultural Ecology

90WN0030A Copenhagen BERLINGSKE AFTEN
in Danish 11 Apr 90 p 5

[Article by Asbjorn Jorgensen: "Minister Fights 'Greenhouse Effect'"—first paragraph is BERLINGSKE AFTEN introduction]

[Text] Environmental struggle. In a few weeks the environment minister will issue a status report on the water quality plan. The stage is set for a new tug of war with agriculture and the Liberal Party. Denmark's role as international environmental guardian is in jeopardy.

Agriculture is not living up to the requirements of the water quality plan. Danish farmers still use too much artificial fertilizer containing nitrogen. Measurements show this and farmers admit it.

This means that Environment Minister Lone Dybkjaer (Radical Liberal) will have a problem when she has to provide the Folketing with a status report on the water quality plan a month from now. The plan's specific main requirements were improved waste water treatment and a reduction of agricultural pollution. The first requirement has apparently been met, the latter is a long way from fulfillment.

In other words the environment minister must force agriculture into line. If she does not, she will jeopardize her own and Denmark's international credibility in the environmental area. And she will have to take a lot of heat from her old colleagues in Folketing's Green opposition and from environmentalists.

But Environment Minister Lone Dybkjaer cannot force farmers to toe the line immediately. She must first engage in an internal government power struggle with the Liberals.

At the North Sea conference in the Hague at the beginning of March, Lone Dybkjaer presented herself and Denmark as the foremost international guardians of the environment. This received favorable attention from Danish and foreign media. In particular she attacked Great Britain, which has not stopped dumping toxic

industrial waste and sewage into the North Sea in spite of previous promises to turn over a new leaf.

British Environment Minister Chris Patten counterattacked Dybkjaer: "The oldest greenhouse effect is based on the idea that people who live in glass houses should not throw stones." Politicians in this country have also warned Lone Dybkjaer.

Leif Hermann, a member of Folketing's Environment Committee representing the Socialist People's Party [SF], says he can't wait to see if the Radicals will live up to their environmental promises.

Opposition Standing Firm

"Denmark was one of the first countries to realize that agriculture is an environmental problem. But it does not look good in comparison with other countries that agriculture has not met the goal of the water quality plan. It's a slap in the face for us. We must make agriculture toe the line," said Leif Hermann.

Henning Mork Jorgensen is a biologist with Denmark's Nature Conservancy Society whose media campaign in 1986 led the Folketing to hastily approve the water quality plan. He says:

"We Danes have made a big commitment to water quality. So the environment minister must tell the farmers once again that they should practice good husbandry and stop fertilizer runoff now. Otherwise the countries around the North Sea and the Baltic Sea will view it as a retreat of enormous dimensions. This is politically intolerable."

The Nature Conservancy Society wants to hold the government to the need to make drastic cut in the use of artificial fertilizer containing nitrogen.

On the other side of this issue stand the Liberals, who are part of the coalition government, with Hanne Severinsen representing them on the Folketing Environment Committee:

"There is no reason to force agriculture into line. The amount of artificial fertilizer used is just a figure. Instead we should look at the effect. Having said this, however, I think farmers must help to spread environmental awareness in their own ranks so those who are dragging their feet also join in."

Thus Hanne Severinsen takes a position close to that of top agricultural leaders. H.O.A. Kjeldsen, president of the Agricultural Council:

"We will not reach the goal for cleaning up nitrogen runoff within the time framework. But from the beginning we have clearly said that it is impossible to reduce the use of artificial fertilizer to that extent, it is a question of profits for the farmers. Now we would like to discuss it again on a factual level."

WEST EUROPE

Environmental Requirements Help

The Environmental Board will supply the background material for the environment minister's report on the water quality plan. The board will publish its assessment of how nature has reacted to the plan in the fall.

Mogens Dyhr-Nielsen, Environmental Board consultant:

"We are quite sure where this is leading even now. But we will not start an external debate before we know the exact condition of the water. There were factual uncertainties last time. Now we want a solid foundation."

But we will not escape a debate on agricultural pollution until then.

Tough requirements for waste discharge can produce results.

The Limfjord committee, made up of counties and communities around the fjord, has just released a report showing that the thorough treatment of waste water from towns and industries in recent years has substantially improved the condition of the fjord. A lower influx of nutritive salts, clearer water, more oxygen.

"It is quite clear that towns and industries are putting less stress on Limfjord, but we see no agricultural reduction. Now it is agriculture's turn, so our goals can be fulfilled," says Jens Anton Christensen, Viborg County biologist and secretary of the committee.

If agriculture does not take its turn now, the cost of cleaner water will increase. According to Professor Kaj Sand Jensen, a biologist at the Freshwater Laboratory, it is expense to postpone improvements in water quality. Accumulated toxic material always make it harder to restore clean water and various self-intensifying factors tend to make things that are going wrong suddenly get much worse.

New Signals

In the debate that led up to the approval of the water quality plan agriculturalists flatly rejected the accusations of pollution. If they did happen to be polluting, it didn't mean anything. And they certainly couldn't afford to do anything about it. Among other things the plan called for cutting the discharge of nitrogen in half, which meant that farmers should have gone from an annual use of 365,000 tons of nitrogen fertilizer to 250,000 tons this year. Agriculture still uses around 350,000 tons.

Farmers are still complaining about the necessity of limiting pollution. Axel Ladegaard Jensen of the Farmers' Association says it is still impossible for them to moderate the use of artificial fertilizer. And adds that if this is done anyway, it will have a negative effect on production.

The president of the Agricultural Council, H.O.A. Kjeldsen, is still sniping at the politicians:

"It is true that we have not fulfilled all the requirements of the water quality plan. But Folketing has also let us down. For example subsidy funds for liquid fertilizer tanks that meet environmental requirements ran out."

Industry's tactical concessions to the "Greens" seem to have gone over well with the public and the authorities. And today, barely three years after the water quality plan was approved, agriculture has learned something from industry. The words are more conciliatory. But what about the active fulfillment of environmental demands?

Ladegaard Jensen and Kjeldsen say that meeting the requirements of the water quality plan can occur within this century. Which means a delay of 5-10 years.

H.O.A. Kjeldsen: "It takes time or it costs money. We want to live up to the water quality plan, partly for egotistic reasons, of course. Artificial fertilizers are very expensive. And if we can follow a Green line, it will have international significance. The West Germans in particular are increasingly prepared to pay a little more for naturally produced agricultural products. Compared with Holland we have a better image as far as the Germans are concerned."

SF's Leif Hermann: "The time for reaching the goal of the water quality plan is over, so the timetable must be revised. But we will not withdraw our demands. We are ready to enter into an open discussion with agriculture on a new Green strategy," Leif Hermann said.

The water quality plan was drawn up by the government consisting of the Liberals, the Conservatives, the Christian People's Party and the Center Democrats with Environment Minister Christian Christensen. Lone Dybkjaer and the Radicals were compromise partners. The government drafted the plan under the strong influence of reactions to a TV broadcast in the summer of 1986 which showed pictures of Kattegat's dead lobsters. Denmark's Nature Conservancy Society quickly came up with a plan of action and the public debate and Folketing opposition forces pressed the government to act quickly.

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